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# CANADIAN GEOGRAPHICAL JOURNAL

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By A. V. Coverley-Price

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# From the Retiring Governor General



## *To the Members of the Canadian Geographical Society*

I HAVE followed the work of the Canadian Geographical Society with unusual interest. No one who has travelled throughout Canada, from Cape Breton to Vancouver Island, and has seen something of the north country, can fail to be impressed not only by the immense area of the Dominion but even more so by the variety and extent of its resources. Yet even the best informed can only have a general knowledge of the magnitude and value of the heritage of the Canadian people. It is the purpose of the Canadian Geographical Society, through its magazine the Canadian Geographical Journal, to publish accurate and readable articles, attractively illustrated, on every phase of the resources of the country, aesthetic and economic; its National Parks and scenery, and opportunities for every kind of sport, as well as its minerals and fisheries, and the many other products of its land and waterways. How well it is fulfilling this patriotic and praiseworthy purpose no one can doubt who has read the Journal. Dependent upon the strength of its membership, it has been difficult, even with the most rigorous economy, to make the Journal self-supporting. No thoughtful Canadian, ambitious that his country and all that it stands for should be better understood both at home and abroad, can fail to approve of the objects of the Canadian Geographical Society. I therefore have no hesitation in urging those who have not already become members to do so.

*Bennett*

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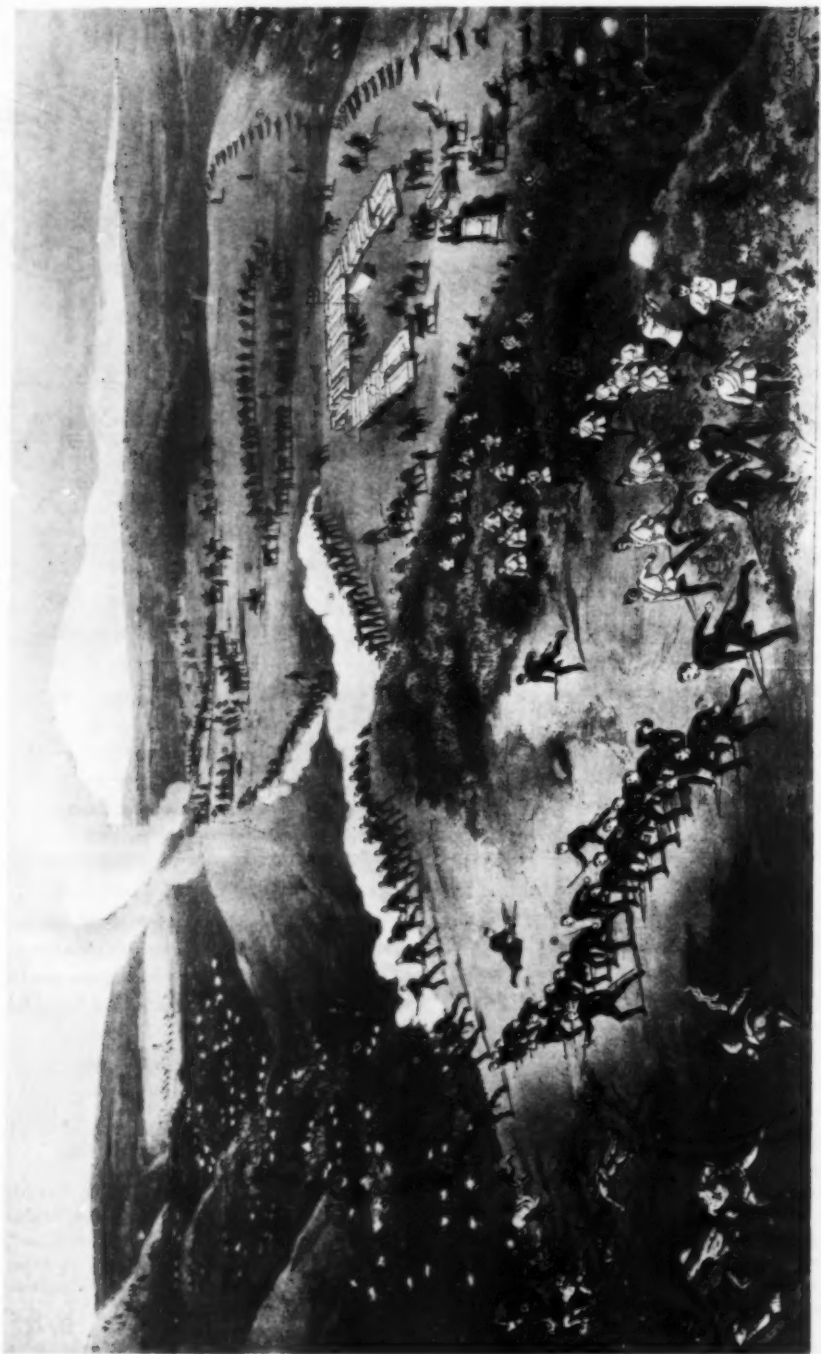
*The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1929.*

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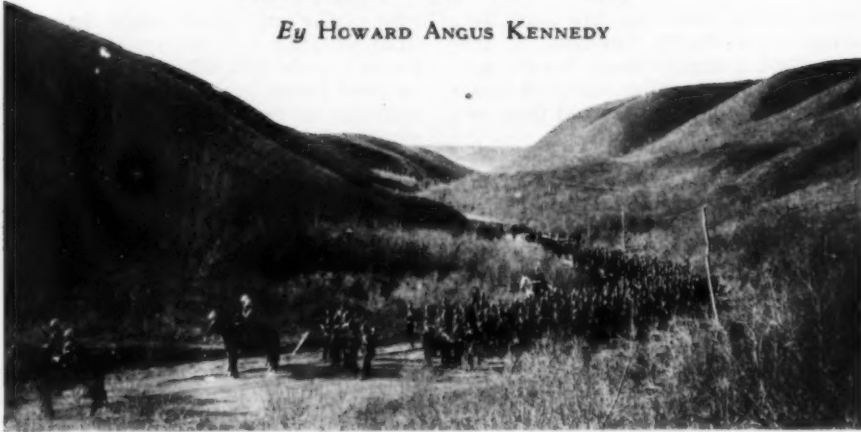


The Battle of Culknife Creek, where Otter's force was surrounded. From an imaginary sketch, based on information by various participants. Published by the Grip Publishing Company, Toronto. The neat arrangement of waggons, horses and men suggests that the informants were playing a joke on the artist.



# Memories of '85

By HOWARD ANGUS KENNEDY



*The 90th Winnipeg Rifles leaving Fort Qu'Appelle by the Touchwood Trail, on the march to Batoche under General Middleton.*

WE'RE making history, eh?" The young Mounted Policeman who spoke had been riding beside me in silence for an hour. Few of us were in any mood for conversation, and most of us could hardly keep our eyes open.

The day before, we had set out from Battleford three hundred strong. We had ridden all night to catch the Indians at dawn, asleep in their tents on Cutknife Hill. We had failed. After the most disastrous fight of the campaign we were now in full retreat, carrying waggon-loads of dead and wounded, with little chance for the rest of us if the Indians had followed us unseen. To pick us off piecemeal as we threaded a narrow winding trail through the woods.

There is no denying that we "made history" at a painful rate in "the '85," but we made still more Geography — and, for all but the killed and wounded, it was the Geography that hurt. History, with its high spots of battle, murder and sudden death, filled the endless columns of war news in the press, but Geography, with its immensity and variety, filled the endless columns of marching life. The men who went right through that campaign endured far more hardship on the march than in the short sharp ordeal of actual fight.

The temperature climbed as we went north, from a nightly sub-zero on the southern plateau to 80 or 90 (by guess, for we had no thermometer) when 200 miles nearer the pole.

The water was often too highly flavoured with alkali, till late in the campaign when we got up into the northern woodland with its rushing streams; but we managed to drink it boiled with tea and sugar, — we had no milk, even canned.

The hard tack was severe, and some of it was inhabited; but it was nourishing, and, when we had time to fry it, almost tasty.

The northern muskegs were dangerous to ford, but we managed to circumnavigate them, picking our way, heads down, between wood and water.

The northern mosquitoes were a plague to man and beast, — unspeakable, and, on the march by day, inescapable, though we kept swishing them off our horses and ourselves, with branches plucked from the trees as we rode. At night we could only get sleep by filling the tent with the dense smudge of burning turf, crawling under the smoke when it had risen a foot from the ground, and then pulling the flap shut tight.

Our clothes wore out into rags; but, thanks to motherly foresight, a few of us had brought along needle and thread; many a soldier marched home in stylish pants reconstructed from oat sacks, stencil brand and all.

Feet were less easily accommodated than legs. We had shoemakers as well as tailors among the volunteers, but no leather for them to make shoes with. I suppose our French fellow-citizens have lost the ancestral art of making sabots; for the gallant 65th of Montreal, after marching north from Calgary to Edmonton, descending the North Saskatchewan, and then striking north again in pursuit of the Frog Lake murderers, were doing sentry-go in bare feet when I found them at last on the banks of Beaver River.

Here, you will please understand, I am not trying to pack into a few pages either a history of that curious campaign or a geography of its arena. I am reproducing for the readers of 1935

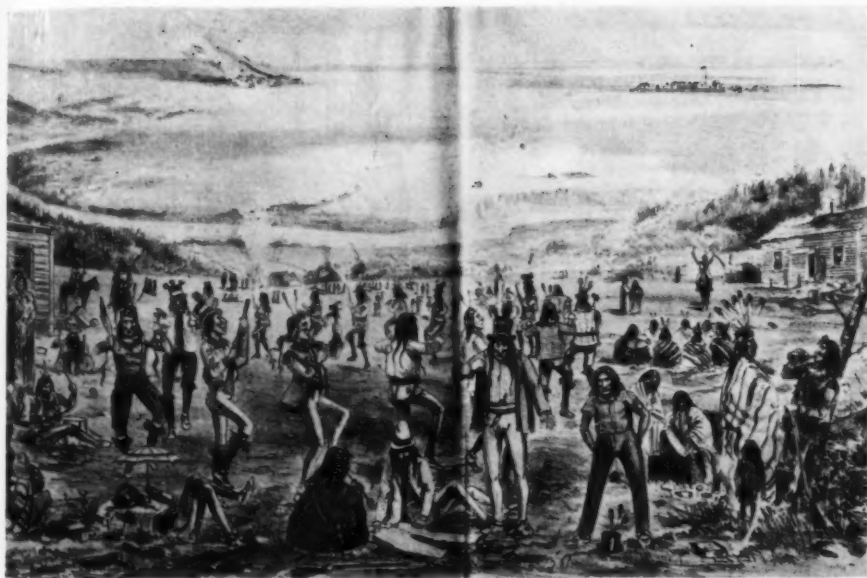
some of the impressions made upon my mind in 1885 by the scenes through which I rode and the events as they occurred before my eyes. These impressions are as fresh today as when they were made, not softened or transfigured by the passing of half a century, for I have checked them carefully with the original detailed reports I wrote at the time under canvas, waggon, or blue sky, — often jogging along in the saddle.

The novelty of that year's experience to most of us can hardly be exaggerated. Few of the citizen soldiers who formed our militia battalions had ever been on active service before, — just a sprinkling of Imperial Army veterans. To most of us Easterners, the West was then an unknown land, and few even of the Winnipeg volunteers had ever been out in the wilderness beyond their own then "postage stamp" Province.

The first eastern units despatched got their surprise even before they reached "the West", which was supposed



*The first fight at Duck Lake. Crosier's Mounted Police and Prince Albert Volunteers, going to save stores from capture, were driven back, leaving twelve dead on the snow. The news of Riel's victory inflamed Indians at Frog Lake to murder priests and settlers.*



*The looting of the old village of Battleford south of the Battle River. The Mounted Police Fort is seen in the background on the high plateau north of the river.*

to begin with Manitoba. Fortunately the building of the Canadian Pacific Railway was far in advance of its contract, or the fire of rebellion might have spread into a conflagration before the troops could arrive to stamp it out. As it was, there were still four gaps in the unfinished line north of Lake Superior. Over the snow and ice of the two shortest gaps, the soldiers marched; over the other two they rode in sleighs provided by the railway company; on the stretches of steel between gaps they were carried in open trucks. The company's promise to rush an army from Toronto and Montreal to Qu'Appelle in eleven days, though received with incredulity by the Government, was fulfilled, with three days to spare. But when I saw the troops alighting at Winnipeg they looked as if they had already gone through a campaign. Many of them were frost-bitten, and half blind with the glare of snow.

My own escape was simply due to the fact that I was allowed, as a civilian, to travel through the United States, though our men in uniform were not. From

that time on, throughout the campaign, I took pot luck with them, — pot luck and shot luck.

One advantage I had, over the infantry at any rate, — I could ride, while they had to walk, with an occasional lift from a supply waggon. In Winnipeg I bought a cheap saddle — \$8, to be exact. Travelling by train to Qu'Appelle, whence the troops under General Middleton were to march north against the Métis in arms at Batoche, I found that another force, under Col. Otter, was going on to Swift Current, for a dash up north against the Indians at Battleford.

Indians on the warpath seemed to promise a more exciting adventure than their comparatively civilized half-cousins. I climbed into a caboose leaving Qu'Appelle with the first detachment of Otter's force, and presently landed where the city of Swift Current now stands. It then consisted of half a dozen shacks facing the station.

Not a horse was to be had. Presently I found a man who owned one and offered it to me for \$75. But where was it? "Oh," said he "out there", waving



Battles in tapestry by the author of this article. Left: Batoche, showing General Middleton at the left, Louis Riel at extreme

expansively at the prairie, where it had been roaming all winter. The prairie stretched for a thousand miles or so without the vestige of a fence to limit the travels of an enterprising horse. Even if it had not strayed to the Great Lakes or Rocky Mountains, it had probably joined a herd of wild horses. Such herds were common on the prairie then. They were the most independent communities in the world, avoiding humanity and detesting its restraints,—all the more defiant because many of their recruits had escaped from the service of man. My chance of a mount seemed small.

Days passed,—the army arrived, but no horse. More days passed,—the army went marching off to the north, and still no horse. At last it came, a calcareous bag of bones that might have fetched \$7 or \$8 in peace time. I paid \$75 for him and caught up with the army at its first camping place. Imagine the surprise of that starveling at his first generous feed of army oats!

That was really a notable march to the relief of Battleford,—five days for the hundred and fifty miles from the crossing of the South Saskatchewan, thirty miles north of Swift Current.

The crossing itself had been hard enough. There was a ferry boat, but what was that for the transport of nearly 200 loaded wagons, 600 horses

and 500 men? Up at Medicine Hat, however, there was a river steamboat, a stern-wheeler called the *Northcote*, such as “floats in a heavy dew.” The water was still low, for the mountain snows had hardly begun to melt, and in any case that river was full of sandbanks, with no charted channel, or soundings, or lights to guide the navigator. Never mind; that steamer had been ordered, first to ferry us across at Saskatchewan Landing, and then to go on down the river with supplies for General Middleton’s column, which had started overland from Fort Qu’Appelle for Batoche, the Métis headquarters below Saskatoon.

Such a voyage had never been made before, and it took the *Northcote* nearly a week to reach us, a distance now managed by train in five hours. She was drawing only twenty-six inches of water, but soundings often showed a depth of twenty inches. How did she make it? It sounded like a miracle, till I saw the thing done myself later on. If we stuck on a sand-bank we slipped a cable round a tree on the shore and hauled on the cable with a steam winch. Something had to go—the tree or the cable or the ship. If there was no tree within reach, we stuck a pair of poles down into the river bottom, one on each side, with pulleys and tackle fixed to their tops, and hoisted the steamer up bodily, as if on stilts,—

*right and spirits of  
White and Red hav-  
ing their own fight in  
the sky. Right: Cut-  
knife, showing the  
Red spirit trium-  
phant.*



then full steam ahead, and away she would go into deep water, or on to another sand-bank, as the case might be. . . .

How dead the prairie seemed, before the dawn of spring! The thin dead grass of yester-year was sprinkled white with skulls and skeletons of myriad buffalo. The slaughter field of centuries! Twenty years afterwards, when I rode once more the war-trail of '85, the bones had gone — all gathered up by waggoneers for U.S. sugar factories, — the first crop yielded by that vast plain, and the first freight carried by the C.P.R. from Western Canada. Though the renaissance of the buffalo was still in the future, the prairie was alive with antelope. In '85 the antelope were invisible, scared away doubtless by our march. The only living things we saw were early risers of the gopher tribe, erect and watchful by their holes, a few meadow larks hopping out of our way, and pallid wind-flowers peeping through the dry brown grass, pioneers of the floral host that soon would glorify the summer plains.

Those first nights, early in April, of the march across the bald-headed prairie from Swift Current to Battleford, the temperature must have been well below zero. At first I accepted the hospitality of Colonel Miller and Major Allen, of the Queen's Own, from Toronto. Two pair of grey blankets,

however, and the warmest of clothing, barely kept the frost from my bones. A jug of water by my head was frozen solid. Fortunately I found a private of the Toronto Infantry School who had once been a tailor. He sewed up my blankets into a sleeping sack. That night I chipped in with a tentful of the rank and file. As there were thirteen of us, lying spokewise, our twenty-six feet hob-nobbing around the tent pole, we were as warm as if in our beds. As warm, but not so comfortable. We had no time, even if we had had the spade and pick-axe, to hollow that frozen prairie into harmony with our hips; every night of the march the new camping ground seemed lumpier than the last.

Cold as the nights were, within two hours of the saddle-up my eastern foot would be roasting in the sun, — the western foot still cold in the shade of my cayuse. By noon, the sloughs, if any, were all thawed out, and the boys with both energy and leisure went in swimming. Most of the infantry, cooks excepted, threw themselves down under the wagons and went to sleep. The Cavalry and Artillery wished they could.

So did this war correspondent. He had not only to feed and water his horse but to finish the despatch he had been writing as he rode, on the off-chance of some courier being sent





*Louis Riel, 1844-1885. From a sketch by the late Col. D. T. Irwin, in the Public Archives of Canada.*

same table with it. Now, as long as the curry powder lasted, we curried our corned beef, our sow-belly, even our hard tack, softened by frying in pork fat; from that day my attitude toward curry has been one of respect verging on affection. . . Of course we meant to pay Frank for his goods. I hope the Government paid double the price to his heir.

We had come west with a vague belief—still held by most outsiders—that the prairie was flat. After the gentle rise from the infant town of Swift Current, we had to cross a thirty-mile bare and level plateau, till we looked down into the deep-sunk valley of the Saskatchewan from the edge of a ruggedly broken precipice. From the northern bank, the prairie stretching for a hundred and fifty miles to the Battle River was sometimes

back to the base. Then he would swallow a mouthful of fried salt pork or Chicago corned beef, gulp down a mug of tea, and stuff his ration of hard tack into his pocket. Before he could throw the saddle on his horse, the column was moving off.

Somewhere among the hundred and ninety wagons was a supply of dried apples, by way of anti-scorbutic; but our regular diet, thrice a day, was as I have described it, until, nearing our destination, we discovered two carts full of groceries. The owner, a trader named Frank Smart, had passed us several days before, resolved to run them into Battleford if he could. Seeing Indians ahead, and caching the carts in a bluff, he had succeeded in getting through to the town by dark; but later on, riding out in the hope of rounding up stray cattle for the garrison, he had met sudden death from an Indian bullet. We knew nothing of all that. We had found a treasure, and in a few minutes every unit in the column had secured a share. Until then I had hated curry,—could hardly sit at the



*White Cap, a Sioux chief who was drawn into alliance by Riel and was made a member of the Council although he knew neither Cree nor French and understood nothing of what was going on. He had sought refuge in Saskatchewan from the United States and had been given a reserve near Saskatoon.*



heavily and sometimes gently rolling, but never flat. It was wholly bare of trees, except in a patch, the "sixty mile bush", that distance from the Battle River itself. Nearing the river we espied the first trace of human habitation, the log huts of an Indian reserve. Even there no sign of life appeared. Under a heap of straw behind his house we found the body of the farmer-instructor, Payne, killed in a tussle with a tribesman whose demand for hunting rations he had refused.

Descending toward the Battle River, we passed through the old original village of Battleford, seat of Government for the Northwest Territories before "Pile of Bones" blossomed into Regina. On the outbreak of these troubles all the inhabitants had crossed the river to the new town and taken shelter in the adjacent



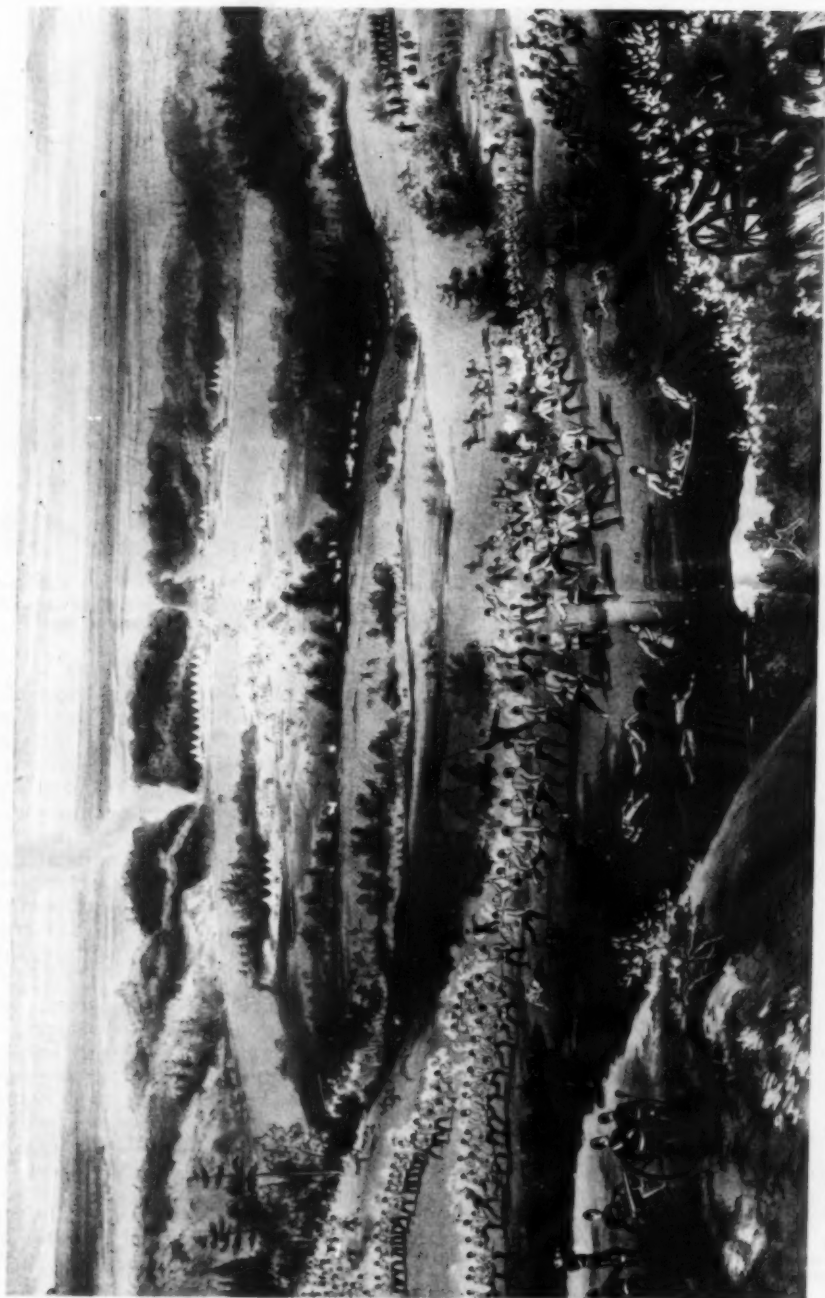
*Poundmaker, friendly Cree chief whose authority had been set aside by warlike Sioux, defended his camp against Otter but prevented pursuit of our retreating force.*



*Big Bear, Cree chief at Frog Lake, who tried to prevent the massacre started by Wandering Spirit. From a pastel sketch by Edmund Morris, son of the Lieutenant Governor of the North West Territories.*

Mounted Police fort, with its stockade and bastions and guns, on the high plateau in the fork of the Battle and the North Saskatchewan. The neighbouring Indians, under persuasion of Riel's envoys, had gathered into a camp, some distance away to the West. From time to time they would come to the uninhabited village, carry off such articles as tempted them, and make a bon-fire of a deserted house. An outbuilding of old Government House was burned, but not the house itself.

Away across the river from old Battleford, the new town stood secure,— "serene and unafraid" I should like to add, but many of the refugees lived in constant fear of an Indian raid. Hence the urgent appeals for rescue, which gave an impression that Battleford was in imminent danger of destruction by an organized and determined enemy. The fact is that even the few Indian tribes who were described as "on the warpath" were not convinced by Riel's claim of Messianic power to win back their country and depose the white



*Battle of Batoche. The final charge that overwhelmed the Métis defence. From "Canadian Pictorial and Illustrated War News," Toronto.*



*Fish Creek. Middleton's march checked by Dumont's Métis concealed in the ravine. Sketch by Capt. H. de H. Haig, R. E., on the General's Staff. From the "Illustrated London News".*

man. In Poundmaker's camp the majority allowed the war party of Sioux, or Stoney Indians, to set aside the peaceful chief's authority; but Riel's men could not persuade them to go off and join him in active prosecution of the war.

"Sacked by the rebel Cree Indians under Poundmaker," is the hair-raising inscription on a cairn in the middle of this town — which was never even touched.

Let me add, in fairness, that if any tribe has to be singled out for blame it should be the Sioux, not the Cree; that the great chief Poundmaker tried again and again to break away from the camp under the war party's control, and that on our retreat from Cutknife Hill he checked a pursuit that might have meant our annihilation.

That was a bad time, the worst of the war; for just before our defeat at Cutknife, General Middleton's advance on Riel's headquarters had been abruptly stopped by the human "hornet's nest" in the ravine of Fish Creek.

Middleton's force could afford to wait, without risk of starvation, for their line of communication with the base at Qu'Appelle was unbroken. At Battleford, we were totally isolated. As aeroplanes and automobiles did not

yet exist, we had to draw our provisions by waggons over a hundred and eighty miles of unprotected trail from Swift Current. The Indians, encouraged by their success at Cutknife, had started eastward at last, apparently to join forces with Riel. Cutting our line of communication, they captured a whole train of 29 waggons laden with our supplies.

The capture of Riel's headquarters, by one rush at the end of three days skirmishing, came just in time to halt the Indian march. On the 26th of May, riding out from Battleford, I met their chiefs coming in to surrender. Silent and solemn, they crossed the river, climbed the heights, and squatted in front of General Middleton's tent, to await their doom.

The General, fresh from his victory at Batoche, took his seat on a camp-stool, and the famous pow-wow began. I still have an old bunch of telegraph forms crowded with my verbatim notes, taken standing beside the General and his trusted interpreter, — big Hourie, himself part Indian, who accompanied his words with a dignified swaying of his body and arms. Poundmaker sat facing the General, a little in advance of the other chiefs. His handsome, strong and intelligent face was surmounted by a

coonskin, the head overlooking the chief's brow. His black hair, in narrow plaits, bound at intervals with brass wire, hung below his waist. With quiet dignity the chief repelled every suggestion of responsibility for the wrong-doing of the tribes. The peppery Middleton called him a liar, but the chief kept his temper.

The General demanded the surrender of the murderers, not only of Payne, but of a farmer named Fremont, shot down in cold blood while greasing the wheels of his waggon. The chief said he did not know who they were, but he spoke a few words to the Indian crowd behind him, and the two killers came forward without hesitation.

With the Métis and Indian leaders in gaol, and their disarmed followers sent back to their homes, our soldiers thought it high time to be homeward-bound themselves. Instead of that, the roughest though not the reddest of their adventures lay ahead of them, — to hunt the Northern wilderness for the Wood Crees who had perpetrated the Frog Lake massacre.

We called this episode the pursuit of the "arch-fiend" Big Bear. In reality that poor old chief had tried to prevent the crime. Like Poundmaker, he was set aside by a fanatical group of his followers, — excited by the news of Riel's early success at Duck Lake.

Carrying with them the survivors of the massacre and a score of white folk captured immediately afterwards at Fort Pitt, these Indians were now roaming through a vast labyrinth of forest and muskeg. At one point General Strange caught up and attacked them; they were in a strong position on Frenchman's Butte, but when he went off for fresh ammunition they gave him the slip. A party of scouts caught up with the tail of their procession fording a lake, but again they got away.

Those prisoners had to be rescued, and the whole of our available force was put on the job, — four columns hunting north on different trails.

After the bad lands and bald prairie of the south, the contrasting beauty of that northern park-land was at first delightful, — its infinite variety of forest and glade, lush meadow, purling brook.

Our aesthetic instincts were gratified — but we were conscious of others!

At Frog Lake, a paradise of natural beauty, nothing was visible of the settlement but cellar holes where houses had been burnt. From one of these we dug the headless remains of two men, and identified by a fragment of red shirt the Indian Agent, Tom Quinn, whose refusal to budge when ordered up to the Indian camp gave the signal for the massacre.

Farther north, where the land was mostly water, the trail was impassable until it was covered with makeshift corduroy of pine and poplar branches. When the swamp was too deep for that, we either waded or, if the muddy bottom was too soft for safety, crept around the edge between wood and water.

The hard tack and salt pork never gave out, but sugar did, — and that, when it happened that the only water for our tea was a pool of black mud and crawling life, was — well, that was that! Then the oats gave out, and the waggon teams, needing strong food for hard hauling, began to suffer. The broncos and cayuses, on the other hand, laughed and fattened on the grass.

At last, emerging from dense forest, we found ourselves looking down into the valley of Beaver River.

It was the end of the trail — the world I knew was all behind me. In front, the outer universe, illimitable, dark, unpeopled, and unknown. The great stream under my eyes, beyond the next curve would become a river of dreams, its course conjectural, a dotted line on our only map, until somehow it resumed existence making for the Churchill and Hudson Bay.

Looking across the swirling water to the high forest barrier of the Great Beyond, I felt for the first time the thrill of a discoverer — on the verge of a new world to explore.

Fortune denied me the chance, by letting the captives escape from their peripatetic imprisonment. After that, it was not thought worth while to hunt their captors, and the war correspondent's enterprise ended with the war.

NOTE: Unfortunately in 1885 the snap-shooting hand camera had not been invented, or at any rate was not yet available, or our pictorial record of the campaign would be less deeply tinged with imagination.

# The Lure of Dalmatia

By W. HARVEY-JELLIE

*Illustrations by courtesy of J. Tosoic of Ragusa*

THE unique attractiveness of the island-studded shores of southern Dalmatia — an attractiveness which constrains the traveller to return time and again to its glorious coast and to haunt its cities till he knows them as a native — lies not merely in the gorgeous colouring of the landscape, the fairy-like hues of its mist-covered mountains, but in the vast variety of interests by which it appeals to the receptive mind. With kaleidoscopic fascination it appeals at one moment to the love of the wild and the graceful in nature, at another to the taste for history and architecture, again to the interest in folk-lore and nationality, and yet once more to the thirst for ecclesiastical story. Its island cities conjure up vivid pictures of far antiquity, of Roman imperialism, of mediaeval romance, of modern commercialism — pictures which melt into one another with the unbroken sequence of the moving picture, till one seems to live through forgotten ages in a modern world.

The grandeur of the Dalmatian coast has been frequently described, but never exaggerated. the lure of its ancient cities, with their hectic history, gives to them a charm which one knows not how to forego. Situated, more-

over, in the very heart of the Old World, Dalmatia presents a form of attraction very different from that of the wild and unexplored regions of central Asia or tropical Africa. The history and the ambitions of all the ages seem to be epitomised there; and it has held with equal force the most varied types of men and minds. The Christian apostle visited its fastnesses; and the poet Byron felt its charm. What wonder, then, if this fringe of the Balkans arouses in the mind of a modern traveller a passion so strong that he dreams of it by night and yearns for it by day!

As a geographical unit, Dalmatia

actually extends from the Quarnero in the north to the neighbourhood of Scutari in the south — a distance of nearly three hundred miles — skirting the coast to the depth of no more than a few miles between the Adriatic and the mountain ranges of the Balkans. Its area is but five thousand square miles and its population only three quarters of a million. Its island reefs guard shores deeply indented with bays and fiords; and the great ranges of the Vilebits and the Dinaric Alps tower up frowningly inland towards the Black Mountains of the central Balkans. But the main interest



*Again on the quays of Spalato we meet the costumes of the Dalmatian peasant. The natives seem to have blended the characteristics of the many races which have played their part in the troubled history of these remarkable cities of the eastern Adriatic.*





*Ragusa, locally known as Dubrovnik, is one of the most interesting cities of the Adriatic, with its imposing fortifications, so suggestive of its heroic history. Its mediaeval churches, palaces and streets present an inexhaustible mine of interest for the student of history. The city is sanitary and clean, with good shops and a busy market.*

centres in the southern stretch, from Ragusa to Spalato — its coastal range, its shores and its islands providing all one needs to become acquainted with its entire life and history.

Much of the varied history of Dalmatia is well known. Its past is an open page. Wild tribes from out of the mysterious north-east came to make their home there long before historians plied the pen to record their origin and organization. Democratic Greece and imperial Rome had each a share in its development. The fiery pioneers of Christianity visited its hills and sailed its shores. Mediaeval powers contended for the possession of its rich valleys — only to discover that its habitants were capable of asserting and maintaining a sturdy independence. Merchants, patriots, heroes — it produced them all, from the days when first it claimed the world's notice until the grim conflict that rent Europe two decades ago. But all this is invested with the charm of wonder when for the first time one

catches sight of the Dalmatian shores bathed by the blue Adriatic and backed by the mountains shrouded in mist or clad in a mantle of snow. The coast steamer from Patras skirts the shores of Corfu and the Albanian hills and approaches the southern limits of Yugoslavia. Contact with land will probably be made first of all at the surpassingly beautiful Gulf of Cattaro, where a few days must be spent in a run to the Montenegrin capital of Cetinje; and from that moment one devoutly prays to be delivered from the hackneyed temper of the guide-book and enabled to see things with truly receptive gaze and appreciative mind. Ancient Ragusa is soon passed and the steamer comes to rest in the romantic inlet of the sea, like some more graceful and less frigid Norwegian fiord, amid green hills and verdant shores, and we disembark at the port of Gravosa. The long line of poor and whitewashed houses is far from prepossessing. But the quays are often alive with the coming of merchant





*The Franciscan monastery of Ragusa, which boasts of having been founded by St. Francis himself, has cloisters of rare beauty with stone-work of delicate tracery.*

ships and the going of Herzegovinian emigrants. And the curious visitor will certainly stay to follow the road beside the river Ombla to the point where it emerges full-born from the foot of the mountain cliffs. Its waters are strong enough to provide the motor-power for a number of active mills, and its banks are lined with pretty houses. But southward the dusty road follows the coast line, past attractive villas half hidden by palm and cypress, till at a bend in the road we come suddenly upon the massive walls and imposing gateway of Ragusa — the Dubrovnik of Slav speech — just where the tree-clad slopes of Mount Sergio plunge down into the deep blue waters of the Mediterranean. Girt by these strong mediaeval walls, intact after centuries of storm and warfare, Dubrovnik appears the very embodiment of proud and conscious strength. Passing through the fine avenue of mulberry trees, we enter the town by the main gateway, the Porta Pile, to the central thoroughfare, the Stradone, broad, stone-paved and shady. Houses and stores on either side, the Franciscan church to the north

and the Renaissance reservoir to the south, the broad street stretches away to the civic offices, the commercial palace and the residence of the Rector. The Stradone is the hub of the city life and it is usually gay with variously-costumed natives — Serbs and Montenegrins from the hills, women in the embroidered dress of Yugoslavia, Herzegovinian peddlers and Dalmatian seamen, wearers of the Turkish fez and frugal natives of Ragusa. The narrow stores display their gaudy wares in front, and market stalls are laden with fruit and garden produce. Hard by the southern gateway stands the cathedral — plain and unpretentious, but still proclaiming the virtues of the patron saint, St. Blaise. The two monasteries, Dominican and Franciscan, have glorious cloisters; and Slav monks move to and fro in cowl and hood, tending the rites of their order, while solemn chants float on the warm air at dawn and dusk. Steep streets and ladder-like lanes extend to east and west, teeming with women and children, gay and colourful. Most of the buildings in the city are comparatively modern, having risen

anew after the tragic earthquake which shattered the ancient city in 1667. In that terrible year neither ruin, nor pestilence, nor death could keep back the survivors from the love of their ancestral homes; and the city rose again as if from the dead. Today it is attractive, sanatory, clean, with hotels able to advertise their comforts to the tourist in the journals of London and New York, and to pose as the gateway to Yugoslavia. Yet the spirits of its great historic past seem to haunt its walls and the voices from its days of

proud independence seem to echo from its ramparts. It requires no great effort to think oneself back in the times when the Stradone, now the centre of life in a city of twelve thousand inhabitants, was an arm of the sea, with quays and warehouses unloading the merchandise from the vessels of a state which dared to compete with Venice and with Genoa. Those were the days when Ragusa stood in its proud independence, with a merchant fleet of four hundred vessels and many a redoubtable war galley. But the scenes were for ever

changing in the turbulent history of the state; and we may again recall in thought the later days when the Stradone had been reclaimed from the sea and formed the main thoroughfare of the city. At one end stands the Rector's Palace, seat of the civic government. The doors of the Palace open and the head of the state emerges clad in scarlet and wearing scarlet stockings and shoes. With him comes a company of state officials and the state band of musicians. Laws are about to be promulgated by the Great Council, composed of all nobles over twenty years of age, and ratified by the Senate, of five and forty members over forty years of age. The ceremony is full of colour and is backed by its stately mediaeval dignity. And without the walls the waters of the Adriatic sleep calm and blue in the sunlight, or, when the fierce winds blow in from the south, the waves leap high over the ramparts from the rocks where they thunder at their base.



*The Franciscan convent of Ragusa is adorned with a remarkable late Gothic doorway, typical of the architectural glories of the coast cities, where early Christianity flourished and where the bishops lavished wealth and art in beautifying their churches.*

To gain a due conception of the power of ancient Ragusa one must visit the island cities over which it dominated; but there is a decided advantage in first of all penetrating into the interior to examine the hill country that runs parallel with the coast. There is a fine carriage road which crosses the rugged Pass of Breno leading to the Herzegovinian town of Trebinje. The journey of some eighteen miles is full of variety, skirting the cliffs, passing through the semi-tropical vegetation, penetrating the barren hills. It is impossible to describe the beauty of the views of the coast or the charm of the valley, deep buried amid the towering mountains, as we approach this key to the Black Mountain country. Trebinje well represents the mingling of western and oriental life, presenting many a Balkan type and boasting its Greek Church as well as its *M o h a m m e d a n* Mosque. The life of its streets, the costumes of its people, the converse in its cafés, are an index to the social and political conditions of the Dalmatian highlands.

From Trebinje we retrace our way by road and then penetrate into the Dalmatian hinterland in its whole stretch from Ragusa to above Spalato. There are state railways, there are good roads, there are bridle paths and hill-side tracks, and often one may find a Ford car opportune and useful. Even from the days of Strabo this country side has had a bad name for sterility;



*The streets of Ragusa consist of narrow lanes, which often become mere flights of steep steps as they climb the hill-side. The city is the gateway to Herzegovina and the interior of Yugoslavia.*

but many a narrow vale has been well used by frugal peasantry, and the land about Ragusa and above Sebenico can vie with fertile Sicily. Sheep and goats feed on the hills. The cry of the jacal echoes from the forests. The people are almost wholly of Serb extraction, with a dash of Italian here and there. Undoubtedly the mountains are bleak and barren, roasting in the heat of summer, or shrouded by the heavy storm clouds in the rainy season. Almost all the way from Trebinje we



*The luxuriant vegetation and brilliant flora of the gardens and hill-sides around Ragusa present a tropical variety and exuberance which form a fascinating background to the grey city on its rocky base with the deep blue of the sea before it.*

follow the frontier between Herzegovina and Dalmatia. At first we are in the valley of the Trebincica, a river which eventually loses itself in the mountain side, to reappear on the shore line under the name of the Ombla. Winding valleys lead us to the port of Metkovic, the centre of a considerable export trade from its fine situation on the banks of the Narenta, the seat of a mediaeval pirate-state. Thence we press on to the north-west, through the villages of Vergorac and Kattuni to Sinj — an interesting little town with buildings belonging to the Franciscans. From Sinj the route is somewhat steep to Salona, but as we follow it all the bleakness of rugged mountain and sparsely peopled valley gives way to the glorious contrast of a coast-line of incomparable beauty. Salona, romantically situated at the foot of Monte Koziak, is today no more than a straggling village; but the vast ruins of Roman greatness, of which the poet Lucan sang, and round which raged the wars of Caesar and Pompey, hold the

interest of the visitor till he wanders over the scenes of legionary warfare and Gothic violence. But, like the harassed populace of mediaeval days, pass on to the still more attractive scenes of Spalato. In local Slav terms this splendid city of 17,000 souls bears the name of Split. It certainly does occupy a situation of unique beauty on the coast, backed by lofty hills and surrounded by rich cultivated lands. Justly proud of its imposing cathedral, its main appeal to the interest of the world lies through the wonderful ruins of the palace of Diocletian. Once more we must call upon the aid of imagination to leap the sixteen centuries and see the ruins cleared of the encumbering houses which fill the space once destined for the imperial household. Then might we see the aged Illyrian prince, who had laid aside the purple, pacing the lofty walls that front the blue Adriatic, while slaves and retainers thronged the halls and gathered round the gates. But today the city, which derives its name from that mighty palace, is wholly



*Spalato is an ancient and flourishing port of northern Dalmatia. Here the emperor Diocletian made his palace to spend the years in after he had resigned the burden of the empire. Its position is one of unrivalled beauty and it possesses a magnificent cathedral.*

given to commerce till it throbs with the pulse of Dalmatian trade. But it is these very shores which have witnessed the immemorial trade between east and west, while their rich resources have aroused the cupidity of merchants and awakened the passions of warriors. The ancient and the modern blend on these shores. When, at dead of night, the moon is flinging its radiance upon the five hundred feet of facade and its fifty arches, along the massive walls which rise to their full eighty feet, the scene seems haunted by the ghosts of long departed warriors. But when the morning sun paints its grey walls in crimson and orange, its quays and gateways are peopled by folk whose costumes proclaim them to have come from all the Balkan states, from Italy and the Orient, alert for commerce and for seamanship, in the many vessels moored by the busy wharfs.

Across the waters of the bay we catch sight of the towers and domes of the ancient city of Traù — and Traù has its cathedral, with the marvellous west

door, which is the architectural wonder of the littoral. And one is struck with the fact that each of these Dalmatian island cities has its own peculiar interest, its own individuality — one its incomparably lovely situation, another its mediaeval romance, a third its halo of ecclesiastical story, a fourth its proof of imperial occupation, and a fifth its record of piratical terrorism. Traù no longer possesses its seven gates and one and twenty churches of mediaeval glory; but its ruined palaces testify to the former greatness that links it with Rome and Venice, with Byzantium and Hungary.

Taking ship from Traù, we follow the coast line southward over waters, now sheltered by the island barrier, and now open to the full and varied moods of the Adriatic, hills and houses mirrored in the silent waters, or breakers leaping at the foot of the crags. And fine steamers they are — these swift and strong craft that ply amid the islands, from Spalato to Ragusa putting into one port after another. Passing the





*The city of Trogir, founded 400 B.C., possesses many mediaeval features of enthralling interest. Its cathedral, built in the eleventh century upon sixth century foundations, has a marvellous entrance portal which forms the climax of the architectural miracle of Dalmatia.*





*Almost every town and village of the Dalmatian coast can point to its imposing ancient gateway, its steep streets, its tiled houses, so peculiar to the Herzegovini.*



*The picturesque Dalmatian costumes, with their Turkish and Oriental features, may frequently be seen on the quays of Spalato. The men, with their great moustaches, favour bright colours, red stockings or spats, blue hose and leather belt — in which formerly they carried pistol and dagger — red waistcoat and embroidered brown jacket.*

island of Solta and touching at the harbour of Milna on the largest of the Dalmatian islands, Brazza, still famed for its wine and oil and quarries, we pass cape Pelegrino in sight of the lemon plantations and oleander groves of Lesina — Lesina, with its ruined Venetian palaces, its cathedral of martyr sanctity, and its broad piazza. And further south we reach Curzola, facing the long peninsula of Sabbioncello. No longer embowered in the vast pine forests of ancient times, Curzola stands on the eastern shores of its island, a shadow of its pristine glory. It has had a history of kaleidoscopic change and in this it is typical of the Dalmatian islands. Subject in turn to Rome and Byzantium, to Naronia and Venice, to Genoa and Hungary, to Bosnia and Ragusa, to France and England, it passed in 1918 from Italy to Yugoslavia. In its lingering customs it still speaks of Moorish, as well as Christian, dominance — witness the still surviving Moresca dance. Viewed from the sea the city has all

the fascination of a mediaeval fortress. Curzola, too, can tell the tale of imperial wars and Christian heroism and widespread commerce.

Further south we pass the islands of Lagosta and Melida. Then once more we come within sight of the lordly battlements of the queen of Dalmatian cities, the rich and proud Ragusa. Surely southern Dalmatia possesses a resistless power to lure the traveller back to its fascinating shores!

But if the Dalmatian coast has its resistless appeal to the lover of the sublime and the graceful in nature that rivals the attractiveness of its historic cities, its appeal is equally strong to the artistic. The antiquarian discovers rich material illustrative of every epoch from earliest antiquity, representing many races and many stages of civilization. In Roman remains and mediaeval architecture its records are amazingly ample. The artist meets with works by the great painters of Italy in many a church and monastery; and Dalmatia



*Curzola, on an island once famed for its dark pine forests and its vines, possesses all the charm of a mediaeval fortress and the activity of a commercial city. In its successive subjection to Rome, Venice, Genoa and Hungary it epitomises the ever-changing history of the Dalmatian cities.*

itself can boast of its native masters of no mean order. On all counts the Dalmatian coast is well deserving of increasing attention.

But there is a question which will be asked before we lay our subject aside. —What of the political status of this fascinating country? To this I must make a brief reply.

At the close of the Great War, amid the far-reaching reconstruction of states and kingdoms, Dalmatia became an integral part of the new kingdom of Yugoslavia. The remarkably beneficent results that followed the formation of this great Balkan state have been apparant in all the years that followed the signing of the treaties of peace. If, prior to the European conflict, Italy had cast longing eyes upon Dalmatia, the possession of which would ultimately assure her of the domination of the Adriatic, such ambitious dreams were disappointed, very largely by the readiness with which European statesmen adopted the points insisted upon by the American President. Yugoslavia re-

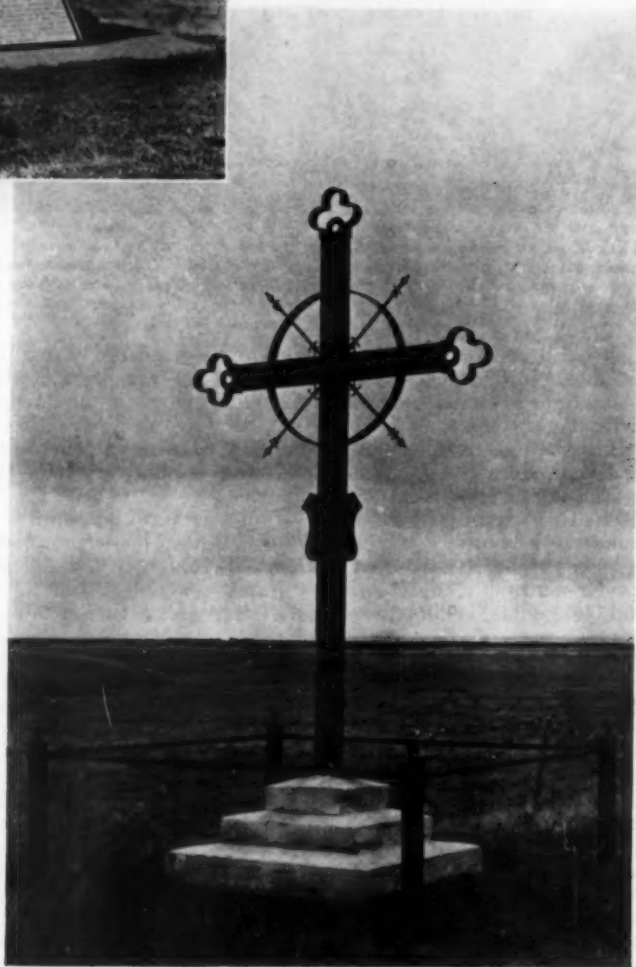
ceived the entire Dalmatian coast, with the exception of the city of Zara. The justice of this arrangement is indicated by the fact that the population of Dalmatia consists of some 700,000 Slavs with a very small percentage of Italians.

Since 1919 the task of welding the several branches of the Slavonic peoples into one strong nation has been carried on with marked success under the late capable monarch. The wave of passionate patriotism aroused by his tragic assassination at Marseilles has at least helped to bring into closer harmony all branches of the population. The task before the new kingdom is still an arduous one, amid the difficulties of international depression; but it is meeting with a considerable measure of success. And towards this building of a united nation the Dalmatian races are contributing valuable elements of culture and energy drawn from a great historic past. There is much to interest the traveller and the student in the Yugoslavian kingdom with the fascinating cities of the Dalmatian coast.



*The stone cross at Morden, N.S., marking the burial place of Acadian fugitives from deportation, who perished there during the winter of 1755-56. This cross stands on the site of the original wooden cross erected by French survivors of the winter.*

*Overlooking the dykelands which the French settlers claimed from the sea, this cross marks the point from which the Grand Pré Acadians were deported in 1755.*





*The village of Grand Pré as it exists today.*

## Grand Pré of the Acadians

*By* BERTON E. ROBINSON

**I**T is unfortunate, from the viewpoint of the person interested in Canadian history and geography, that the Memorial Park at Grand Pré has come to be regarded by almost everyone as the only concrete sign of days of French occupation of that region. Besides the beautiful little park, there may be found in and about the Grand Pré region a number of very interesting relics of the people who occupied this region from 1675 to 1755 and then vanished completely as far as Grand Pré, the birth-place of many of the expelled Acadians, is concerned.

Grand Pré was the centre of the French district known as Les Mines. The name Grand Pré still persists, as does the name Les Mines, in the Anglicized form of "Minas". This name is one of the oldest in North America. De Monts, sailing up the Bay of Fundy in 1604, is said to have seen a cape which he erroneously believed to be

composed largely of gold-bearing rock. In spite of the error, for it was soon found that what he thought was gold was really native copper, the cape still bears the name Cape d'Or which he gave it, and the bay of which it marks the entrance has become Minas Basin, a corruption of Port Aux Mines.

The area of Les Mines extended from what is now Windsor to the present town of Kentville. It is doubtful if in this district there were any French settlers west of the present location of Kentville, or east of what is now Windsor. The latter town was known to the French as Piziquid, and to the English after the treaty of Utrecht as Fort Edward. At Windsor still stands the old block-house of Fort Edward (built about 1764), in excellent condition. This is one of the historic souvenirs that is too often overlooked by those interested in such relics.



*Present day Horton stands on the site of the Acadian settlement of Les Mines. It was from the mouth of the Gaspereau, on the right, that the Acadians were deported.*

From Windsor to Grand Pré there are not many remaining signs of French settlement. Near the present Hortonville, the site of the French village of Les Mines, which gave the district its name, the place of deportation of the Acadians is marked with an iron cross which overlooks the dyke-lands reclaimed from the sea by the Acadians. Unfortunately this memorial is in a spot difficult of access, and few persons see anything of it except a sudden glimpse as the train flashes past.

At Grand Pré there is, besides the Memorial Park maintained by the Canadian Pacific Railway, much more to remind one of the days of French occupation. Along an old French road, which may still be seen, there are a number of Acadian cellars. Due to the passage of time and to the lack of care by present owners of the land, these have filled with earth to a great extent. A few years ago an effort was made to have this old road opened, and it was suggested that some attempt might be made to restore a part of the ancient village. This encountered very strong

opposition among residents and the project was abandoned.

In the Memorial Park, well-known to every visitor to this region, there is a row of ancient willows which are of French origin. In fact wherever one encounters old willows in this district they are probably French; the Acadians were very fond of the willow and planted it in many places. There is also a French well near the willows. The present holders of the park reconstructed the sides of the well and have built a well-sweep of the type that was used by the Acadians.

The Memorial Chapel, at present a museum for relics of Acadian origin, was built on what is believed to be the site of l'Eglise St. Charles, which served the French inhabitants of this district. Great care has been taken by the park commissioners to collect all possible relics, and there is a very good exhibit of iron implement and old coins that have been dug out of the abandoned cellars about Grand Pré.

Near Grand Pré a few traces of French dykes remain, but many of these have





*A general view of the dyke-lands that gave Grand Pré its name — "Great Meadow." In the near distance may be seen the Memorial Chapel with the Basin of Minas and Cape Blomidon in the background.*

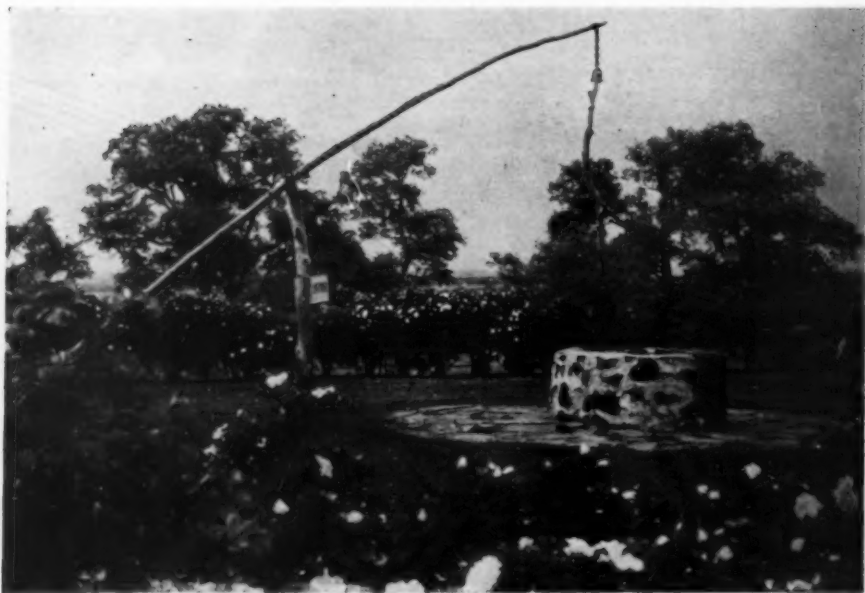
been almost altogether levelled. The New England planters who settled this region from 1760 on, borrowed the dyke-building technique from the French, and pushed the sea-walls farther and farther out into Minas Basin, until only a number of ridges, far inland, mark the site of French work. Some idea of the tireless labour of Acadian settlers may be gathered from the fact that l'Eglise St. Charles stood on a bit of land that was an island at high tide. Today the water does not approach within a mile of the chapel; it is held back by dykes.

The French orchards, of which the Acadians were so proud, are represented today by a few trees. One of the orchards at Ste. Eulalie Farm is almost certainly built around a nucleus of French trees. On the other hand, many trees which tradition marked as French have proved upon investigation to be of later date than 1755, the year of deportation.

From Grand Pré west to Kentville along the valley of the Cornwallis and Canard Rivers, known to the French

as the Grand Habitant, traces of a number of French roads may be seen. Through a grove on Ste. Eulalie Farm can be seen the location of the road that led from Melanson, on the Gaspereau River south of Grand Pré, to the village of Grand Pré; and by following the road the site of the French bridge across the Gaspereau River can be found. It was across this bridge and along this road that Captain Coulon de Villiers led his force from Beaubassin to attack Colonel Noble and an English force at Grand Pré in 1747. The battle which followed, known as the battle of Grand Pré, may have been one of the circumstances which led to the expulsion of the Acadians.

Those who are really interested in the days of French occupation have taken the trouble to trace out the routes of many French roads that ran between Grand Pré and the present town of Kentville. In almost every case distinct signs of the roads can be seen; and there is a movement on foot to have them suitably marked.



*Acadian well in Memorial Park, Grand Pré. In the background are the willows which grew around the site of l'Eglise St. Charles, Acadian church.*



*Blockhouse and barracks at Fort Edward, N.S., erected about 1764. This was the only English fort in Les Mines district during the Acadian period.*



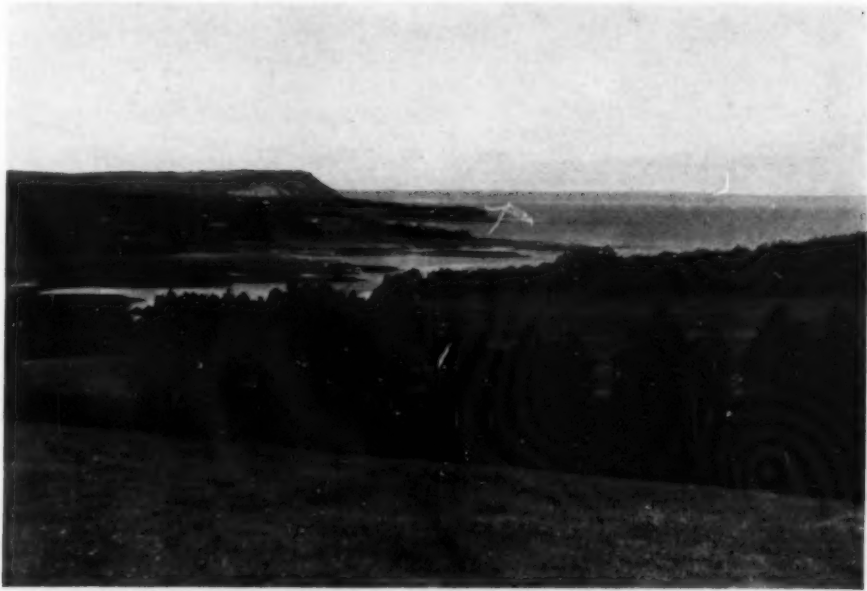
*The village of Poulamond, a modern Acadian French village in Cape Breton. The people who live here are descendants of the original settlers.*



*This venerable apple tree was planted by French Acadians near Grand Pré about 200 years ago. As the heavy bloom shows, it is still bearing fruit.*



*A scene of great pastoral beauty is presented by the present village of Gaspereau, built upon the site of an Acadian settlement of the same name.*



*The Valley of Petit Habitant known today as the Pereau Valley.*

At Morden, formerly called French Cross, there is a memorial commemorating an Acadian tale almost as tragic as that of Evangeline. When the summons for the Acadians to assemble in order to be deported was given by Colonel Winslow in September, 1755, many of the French fled into the dense woods that surrounded Les Mines. Some of them were captured by the English, but others made their way over the bluff North Mountain to the shores of the Bay of Fundy. Here, without food, with only rude shelter from the rigours of winter, they remained until spring, within sight of friendly land across the Bay of Fundy, land that is now New Brunswick. These unfortunates had no way to cross the Bay, and their countrymen on the other shore had no way of knowing their straits. Before spring came fully two-thirds of their number were dead of exposure and starvation. Then, with the help of some friendly Indians, they crossed the Bay in canoes. Before they left, however, they erected a wooden cross in memory of those who had perished. This cross stood for a number of years,

was replaced by another wooden one, and now the burial spot is marked with a stone cross.

These are the concrete reminders of French days in the district of Les Mines. In the realm of words there are a great many traces of French occupation. Place-names such as Grand Pré, Cape d'Or, Minas, have already been mentioned. Besides these there is Canard, where hunters still go for the ducks that gave the place its French name. In Habitant, a little settlement beneath the shadow of Blomidon, the French Petit Habitant is perpetuated. Gaspereau, the name of both a river and a settlement, is a corruption of the French "gasparot," meaning "ale-wife," a fish with which the river teems. Curiously enough, the word "gaspereau" is used locally to mean the fish; and merchants today, in their advertising, make use of a French plural, "gaspereaux," for the corrupted word.

Melanson, a little village near the mouth of the Gaspereau River, still bears its French name, after the first French settler of Les Mines, one Pierre Melanson, who came with his family





*Cape Blomidon from a point near the mouth of the Pereau River.*

from Port Royal at some time between 1675 and 1680.

One word in the local dialect, other than "gaspereau" for ale-wife, remains to tell of French influence. Sluice-ways in the long dyke-walls are called by natives "arboiteaux". Puzzled map-makers for the Department of National Defence dropped the "r", and called them "aboiteaux" on their excellent military maps. From that variation of the word, the late John Frederic Herbin, deeply interested in Acadian relics, deduced that the word must have been originally "abbe d'eau," or "water-dam". Dierville, however, writing of Les Mines in 1699, says that the Acadians called

their dykes, not the sluice-ways alone, "aboteaux". The origin of the word is thus lost; but it remains one of the two Acadian words still in use in the district of Les Mines.

The Grand Pré region is fortunate in that it has the railway and a relatively small group of residents who are determined that this interesting historic spot, the scene of one the most dramatic incidents in Canadian history, shall not fade into oblivion. But for these Long-fellow might have written the truth when he said, "Naught but tradition remains of the beautiful village of Grand Pré".



# Craftsmen of the Stream

By H. U. GREEN

THE beaver ponds near my cabin in the heart of the Riding Mountain National Park are scarcely a mile from a beaten trail winding through the virgin wilderness,—ponds that ripple the mood of every vagrant breeze and mirror the moon and stars of summer nights. Beavers, of course, inhabit the cool waters and labour thereabouts, otherwise this story could not be told, because, but for the efforts of their kind, no place would exist wherein to live, just the tortuous winding of a little creek rushing noisily through a tree-clad valley to the plains below.

From where these little people came, one can only venture a guess, but it was undoubtedly a generation of ancestors who built the dams across the valley floor and constructed conical lodges where still water is deep and free even when winter spreads her ever-thickening ice. It is the evidence of their labour, too, that one sees on the wooded banks nearby, where disordered ranks of be-headed aspen trees lie beside pointed stumps and piles of decaying chips marked with the indelible scars of chiselling teeth. Other signs speak of an occupation of many seasons of drowsy warmth, and the bitter cold of subarctic climes.

Various water-loving wildings, feathered and furred, reside in and about the water of the ponds, living, as it were, at the expense of beaver industry. And when the little creek temporarily ceases to flow, elk, moose, and smaller deer slake their thirst at dawn and loiter to browse upon the shoots and

leaves of tender plants rooted deep below the surface. During the spring and autumn, there are visitors aplenty; for many flights of weary waterfowl swoop down at dusk to rest and feed while wending a hurried way to and from the breeding areas of the north. Within the shelter of willow clumps, where lush grass grows, a solitary bittern will build her nest, and black-birds with epaulettes of vivid red sing and gesture clownishly among the tules and cat-tails. From the plumed height of a tamarack swamp, where hungry nest-

lings wait, the Blue Heron flies with measured beat to fish in the shallows, or rest majestically upon some sunken log. In marshy areas, created by the overflow of the ponds, mallard and pin-tail ducks raise broods of fluffy youngsters, enlivening hours with raucous chatter and the whirr of flapping wings. Muskrats, too, profit by the beaver's labour and seek shelter beneath the eaves of a lodge, following their gracious hosts through channelled

rafts of yellow pond weed drifting at the whim of every changing breeze. When darkness falls, frogs of several species speak, their voices blending with the eerie hoot of Horned owls hunting deep in the forest.

To the lover of the wilderness and wild things there is an indescribable something about these pretty ponds nestling in a valley where the forest and its humble inhabitants have dominion over all; for not a mar or scar of human origin is near to dispel the thought that



*A pair of young beavers feeding.  
Photograph by National Parks of Canada.*



*When adult beavers wander abroad they often build little mounds of mud beside the water of the creeks which they scent with castoreum from the glands of their body. These "sign" heaps are probably to advise others of their kind that they are in the vicinity or have passed by.*

a hundred, yes, a thousand years could have witnessed what one sees to-day.

But chill winds and eddies of swirling leaves when the plaint of the cow-moose echoes through the trees and the bull-elk has ceased his high-pitched call, come only too soon to the beaver ponds. Frost-rimed tules, and misty dawns pierced by the cooling rays of a lowering sun advise migrants to depart and native folk to prepare for winter according to the habits of their kind. Almost overnight, it seems, snow blankets the ground, bending low the branches of giant spruce trees and fashioning gigantic mushroom shapes atop of beaver-cut stumps near the water's edge, where ice creeps jaggedly towards the centre from every side. All is silent, except the moaning of an eternal wind, the cracking of frost-rent trees, and the mournful howling of Brush wolves bent upon filling hungry stomachs with fresh killed food.

To know the beaver people is to realize that they heed the approach of winter several weeks before Nature

conveys her warning to lesser folk than they, who, if also denied the comfort of hibernating sleep, must prepare against the wrath of the elements to come and harvest ample winter food to last until balmy winds from the south bring verdure to the forest floor and crown with shimmering green the pallid trunks of the aspens. And so before the first frosts of autumn tint clinging leaves with a riot of pastel shades, lumbering has commenced in beaverland, and each evening the inhabitants of the ponds, young and old, leave the water and amble to a selected aspen stand nearby to work throughout the darkest hours. On moonlight nights one may see them, — dusky shapes moving across a filigree of light and shadow. One may hear the adults, too, when teeth bite deep in living wood. But an alien noise or a whiff of man-scent will send the workers scurrying to the pond.

Lumbering, though, is not a spontaneous endeavour instinctively performed; for preparations are necessary before the fruit of the beaver's labour



*Cooperative effort. Two beavers join forces to tow a log to their lodge.*

*Photograph by National Parks of Canada.*

can be utilized or stored away for future use,—canals cut through willow-girt shores and paths made clear of entangling growth.

During the nights succeeding the initial venture tree after tree is felled and denuded of branches which are drawn by muscular jaws along the paths to the waters edge and towed to a place beside the lodge where they are piled until the mass sinks to the muddy bottom below where ice will form. Only the tender bark, twigs, and cambium will be consumed, together with soft willow stems harvested in the water of the pond and added to the pile. Additional material is also secured from the heavier parts of the felled trees to strengthen the dam, and, cemented with mud and vegetable fibre, to add thickness to the sloping sides of the lodge, eroded by summer winds and rain. When the marsh birds and feathered songsters have left for warmer southern climes, lumbering is finished for the year, the dam secure against the floods and freshets of spring, and the lodge

plastered thick to withstand the onslaught of the icy blasts to come.

In northern latitudes beavers winter within their lodges and seldom venture above the ice. The time is passed in sleep upon beds of grass and shredded willow bark and in journeying to the food pile to carry provender to the lodge, where the edible portion is devoured and the debris discarded in the pond. Sometimes they will swim beneath the ice for exercise, and possibly to secure the roots of aquatic plants imbedded in the mud. Thus the dreary days drift by in seeming monotony, while in the surrounding forest the frost king reigns supreme and every storm adds a blanket of snow to increase the comfort of a cozy home.

Spring is indeed welcome to these little people of the forest after many weeks' confinement in almost total darkness. Long before the ice of the ponds has melted away they are abroad and happy in their freedom. What remains of the winter food is now forgotten in favour of succulent vegetation peeping



*Several feet of ice and snow cover the beaver ponds when winter comes, and each succeeding storm adds a protective blanket to the lodge. A wisp of vapour feathering above the apex alone tells of life within.*

above the water of the shallows and bursting through the carpet of leaves in sunny vistas on the slopes. The time has now arrived for the departure of last year's progeny before another litter of beaver "kittens" appears upon the scene. They leave casually and, ap-

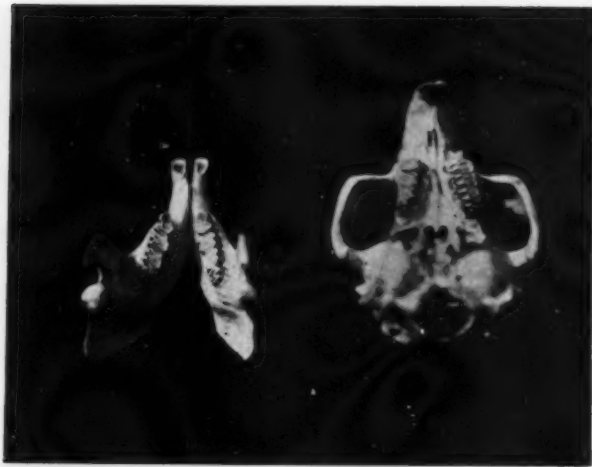
parently, without regret to wander down the valley, passing their second winter within a burrow beside some deep pool. When spring again returns the migrants are almost full grown and, realizing their responsibilities, set out in search of mates with an insistent desire to create



*The naked portion of the beaver's tail, covered with about 80 transverse rows of scales, is from 9 to 11 inches long and 4 to 5 inches across the widest part. The large webbed hind feet have 5 digits terminating in nails, in contrast to the small front feet, devoid of connective tissue and armed with 5 sharp claws. The photograph illustrates the comparative size of these members in relation to each other.*



*The front of the beaver's incisor teeth are coated with hard enamel, while the rear parts are composed of soft dentine. Consequently, as the dentine wears away faster than the enamel, a sharp chisel-shaped crown is always present.*



or occupy a pond of their own. The adult male beavers also journey abroad while their consorts give birth to from two to six youngsters. But after the elapse of several days return to assist in protecting the little family, and aid in teaching them the habits that all

young beavers must acquire before compelled to fend for themselves. One may trace the wanderings of the males when they temporarily desert the ponds, through little piles of wet mud built beside the banks of the creek and liberally sprayed with castoreum from



*An "island" lodge built beside the deep submerged channel of the dammed up creek. Rafts of yellow pond weed float here and there and anchor about the stumps of water-killed trees and floating logs. Beyond, aspen poplars grow in profusion, promising a food supply for many years.*



*The scars of beaver teeth are indelible marks which tell of many things. It almost seems that the unsevered portion of the trunk is purposely left intact to create a lag in the fall and so permit the beaver to leave the scene with an added margin of safety.*

the scent glands of their bodies. No doubt these monuments are left as signs for other beavers indicating that a member of their race has passed by.

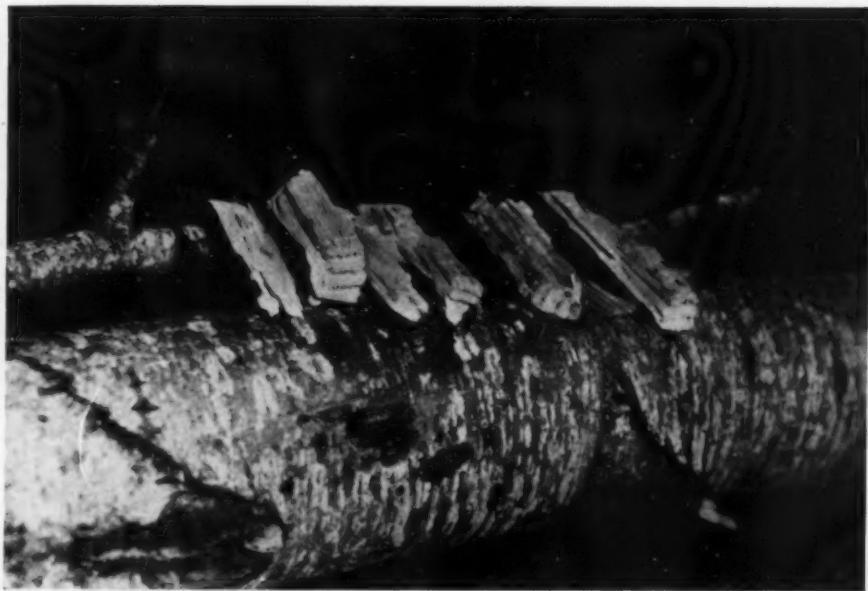
Beaver "kittens" quickly gain size and strength, but several weeks elapse before the water beckons and they can swim and dive like their parents. If compelled to vacate the lodge prior to the usual time, they float to the surface of the pond, and, unable to submerge and return, drift helplessly about crying piteously until a parent comes to the rescue and carries them home clasped tight against its breast.

Summer days are lazy in beaverland, for contrary to popular belief the beaver does not work all the time. There is little to do but sleep, swim and play, and gather the stems and leaves of tender plants, which, at this season of the year, are preferred to coarser food. Not until the ground vegetation is withered and dry will the aspen thickets be invaded before harvest time. The dam, of course, requires constant supervision to keep it as tight as possible but,

excluding emergencies, only necessary energy is expended.

Life, though, as with all wild things, has its difficulties and dangers. Sometimes a Brush wolf will kill an adult or "kitten" caught unawares away from water. A travelling otter family may sojourn in a pond in search of ducklings and little fish and attack a beaver youngster by way of diversion, and even an adult, if their numbers allow. But most feared of all creatures is the beaver's arch-enemy, Man, who with iniquitous steel traps will destroy a family of these forest people with as little compunction as one would exterminate destructive vermin.

One soon learns after an intimate acquaintance with beavers, month by month and season after season, that many things are told about them which are untrue. For instance, the flat paddle-shaped tail is not used for a trowel to plaster mud and, akin to other wild creatures, they cannot foretell the weather. Neither are trees deliberately felled across a stream to



*Contrary to popular belief beavers do not gnaw through a tree. The trunk is furrowed above and below and the intervening wood pried out in the form of a large chip. Here is a handful of beaver-made chips selected at random. The largest is over four inches long.*

act as a support against which to build a dam. Numerous equally wonderful attributes have been described from time to time, but few can survive the test of scientific investigation.

Beavers, nevertheless, undertake and accomplish many engineering feats with foresight and unerring accuracy, as all who know them will aver. The lodge, using the arch as the principle of support; the dam, constructed with due regard to location and the purpose it must serve; canals, dug with precision and skill; and lumbering activities pursued with technical ability; have rightfully earned for these intelligent creatures the title at the head of this article "Craftsmen of the Stream."

The construction of a lodge is no small endeavour. One built by a beaver couple under my observation required the labour of many nights before it was habitable. They chose a hummock in the deepest part of the pond for a site, and erected a foundation of aspen branches weighted with gravel and stones until the mass peeped raft-like

above the water. Night after night sticks cemented with mud and vegetable debris were added with care until the apex of a perfect cone reared six feet above the surface. At a glance one might think the work complete and the beavers comfortably ensconced within. But there was still more work to do, for although the outside of the structure was solid, the centre was loosely filled with debris from base to crown. As the construction proceeded an entrance tunnel was cut upwards through the submerged foundation to the centre of the new dwelling and the loose material removed flush with the solid walls to form a "room" with sloping floor about six inches above the level of the pond. There was nothing flimsy about the structure. From eight to ten inches of wall separated the beavers from the outside world, except at the apex which was left free of mud to permit ventilation through a tangle of sticks. The work performed beneath the water would seem irksome until we learn that beavers can remain submerged for several



*A beaver at work on the roof of his lodge in Riding Mountain National Park, Manitoba.*

*Photograph by National Parks of Canada*

minutes at a time. Their lips, too, meet behind the incisor teeth and so allow their use without discomfort.

The beavers of which I write raise dams of brush and small aspen limbs, instead of heavier wood used on other ranges where beavers live. The material is placed with the heavy ends upstream and cemented with mud and muck carried to the scene clasped tight in the beaver's arms. Thus the structure is raised to the desired height. The surplus water of the resulting pond is permitted to cascade over a spillway, usually located where the dam crosses the channel of the creek. At first the dam leaks, but every freshet brings its load of silt, covering the inner face with a thick sloping wall of impervious mud. Later, weeds and willows grow about the crest, binding the mass more tightly together until it has the appearance of a natural barrier.

Perhaps the most interesting phase of the beavers' activity is the felling of trees. How this remarkable feat is accomplished, is a question often asked but seldom answered, for while it is a simple matter to ascertain that tree trunks are severed with sharp incisor teeth and the removal of chips, it is rarely realized that a definite and well ordered technique exists which is invariably followed. It is never a haphazard venture as commonly supposed. While there is no evidence which would lead one to believe that beavers deliberately fell a tree in a desired direction, nevertheless the more one studies their work the more one is impressed with the fact that they know from the position assumed during the major part of the operation that it will fall in a general direction away from them. Why this should occur is quite apparent. Even an axe-cut tree, expertly felled, crashes to the ground according to the manner in which it is scarfed,—away from the cutter.

If we have patience we learn that beavers swim with alternate strokes of their webbed hind feet which, on occasion, aid the rudder-like movements of the tail to change direction. The fore feet, or "hands," devoid of connective tissue, are hugged tight to the breast. Should they be disturbed while swimming or lazing about the ponds,

the report of a beaver tail struck smartly on the surface as they dive from sight sounds the alarm that possible danger draws near. At times, however, the noise seems to serve no more useful purpose than the playful enjoyment it affords. Sharp hearing and keen scent, rather than long vision, together with a watery environment, prove ample protection to an otherwise helpless animal whose slow movements on land are a disadvantage where natural enemies abound.

One learns of other things more intimate. And so we find that their mating is lifelong, and only on the death of one does the other seek a further union. That they are cleanly and spend a great deal of time performing an elaborate toilet, oiling their fur with "hands" well greased from the oil glands of their bodies and smoothing out snarls and tangles with their hind feet whose two inner nails have supernumary growths that make excellent combs. Examine them closely when life is gone and you learn that the apertures of the ears and nostrils are equipped with "valves" controlled by voluntary muscles to exclude water while submerged, and other details of a specialized anatomy that enquiring minds seek to add to the treasure of their lore.

Pages could be written about this clever little worker I have come to know so well which would tell in greater detail the story of its life and the psychology of a humble mind. One may add that the insistent demand for fur speeds a scattered remnant of their race to the brink of extinction. Lodges, bleached by wind and rain, stand tomb-like in countless empty valleys where once the beaver lived and prospered. Ponds and meadows, affording a generous habitat for a host of wild things, have reverted to dry depressions and arid flats devoid of life, records of an inglorious past in the history of a wonderful animal whose one apparent value is a lifeless coat of glossy fur. It is well that the peace and protection of sanctuary is provided by those who appreciate the aesthetic value of our national animal emblem, to the end that it will not entirely perish in a land whose many escutcheons bear a replica of its furry form.





# Through Central Peru

By A. V. COVERLEY-PRICE

*Illustrations from water colours by the author.*

ON account of the necessarily limited space available, I shall not attempt to give here more than a brief description of the very interesting geological expedition in which I was privileged to take part.

The late Professor J. W. Gregory, whose work in connection with the Great Rift Valley is well known to geologists, had long cherished a desire to examine a part of the Andean region in order to ascertain what had happened there at the time when the Great Rift Valley was being formed. He planned the journey to Peru himself and, while the expedition was given valuable assistance by officials and other authorities both in England and Peru, the records of his investigations which survived the disaster in which he lost his life testify to the skill, experience and whole-hearted devotion which he brought to his work.

Professor Gregory's companions on his last great journey were Miss Mc-

Kinnon Wood, who specialised in fossil collecting; Mr. Tarnawiecki, a Peruvian mining engineer of wide experience; and myself. I was granted leave from the British Diplomatic Service to join the expedition after my transfer from His Majesty's Legation in Mexico City. Besides acting as interpreter in Spanish, I made over 150 watercolour sketches illustrating every region of the country visited.

The work of the expedition, principally concerned with the problems of structural geology, lay in three distinct regions:

- (a) The coastal deserts of Peru, south of Lima.
- (b) The central section of the Peruvian Andes, through which the first geological traverse was made.
- (c) The eastern face of the Andes, as seen from the rivers Urubamba and Ucayali.



*The delightful village of Cabana in the high Andes has a crumbling Church facing the main square. The inhabitants wear picturesque costumes, and know little of life beyond their mountain home.*



*The progress of the mule train through the foothills, where vegetation became more luxurious, was difficult. Sometimes boulders as large as a house, brought down by a sudden mountain torrent, barred the way.*

The desert area, the aridity of which is mainly due to the influence of the Humboldt or Peruvian Current, was the first to be visited. Setting out by motor-car from Lima on February 14th, 1932, the expedition spent five weeks in extensive exploration of the area, making journeys from three headquarters in succession, Pisco, Ica and Nazca. Because the mountains are near the coast, the rivers flowing into the Pacific Ocean are short and swift; but, speaking in general terms, their water only reaches the sea in years of exceptional rainfall. At other times most of it is used for irrigating the farms and cotton plantations in the green belts along the river banks.

Cotton is one of the chief products of this district, and the problem of its preservation when the caterpillar plague makes its appearance has been solved by the use of aircraft for "dusting" the crops with finely powdered calcium arsenate. Formerly, when dusting was done by hand, hundreds of men had to work for several days, and even then they were unable to save the whole of

a large crop from destruction. Now an airman, who must be a daring pilot, flies to the affected area at dawn or dusk when there is no wind to carry away the powder, and, swooping down until the wheels of his machine, within five or six feet of the ground, touch the tops of the cotton plants, skims up and down the field along parallel lines while a cloud of the white dusting powder is scattered like smoke behind the aeroplane. Within an hour or two he is able to cover many acres of land, and the powder, settling on the plants, rapidly kills the plague.

South of the Paracas peninsula the desert presents a wall of cliffs to the Pacific Ocean. Between the coast and the bare, rocky foothills of the Andes there lies a region of shifting sand-dunes, masses of outcropping rock and hard, level *pampas*.

Before I went to Peru I had always thought that the condor, sometimes referred to as "The Monarch of the Andes," was only found among the highest mountains of South America. But I actually saw few condors in the



*Querobamba is a village of mud buildings, situated at an altitude of nearly 12,000 feet on the cold puña. Rumours of bandits were first heard here.*

lofty interior of Peru. On the coast, however, there were many of these majestic birds, and it was not altogether pleasant to hear the wind humming through their feathers as they swept low above my head while I sat sketching on the cliffs overlooking the Pacific Ocean. While returning from one of my climbs in the foothills I was pursued by two giant condors for more than two hours. They wheeled above me like birds of prey watching for a victim, and no doubt they were hoping that I would fall on the slippery scree and provide an unusual feast in that arid wilderness.

In this desert region the expedition searched for and found a mountain mass known as Monte Criterion which had been placed on the map, inaccurately, in accordance with rough observations made from the sea during the famous voyage of H. M. S. "Beagle" more than half a century ago. Members of the expedition climbed the mountain which, I understand, had never been visited before.

In order that we might undertake the second part of the journey across

the mountain belt, which varies in width from three hundred to four hundred miles and maintains a general level between ten and twelve thousand feet, with isolated peaks of double that altitude, we had to collect about twenty transport and riding mules, with muleteers. Because motor transport has replaced mule transport near the coast, no mules were to be found in the neighbourhood of Nazca, and Mr. Tarnawiecki was obliged to travel four days inland to Lucanas in search of them. He succeeded in collecting nineteen mules, but the muleteers were even more obstinate than the mules, and he only induced the headman to accompany him back to Nazca by threatening to shoot him if he did not do so. Meanwhile the rest of us continued to carry out extensive exploration in the desert area, often bivouacking in the sandy waste and collecting many hundreds of geological specimens and fossils.

On March 20th we turned our backs on the problems of the coastal desert and began the long and tedious ascent through the foothills of the Andes, gradually mounting a succession of



*Andahuaylas is a little town where the picturesque folk of the mountains, wrapped in colourful "ponchos" and wearing strange felt hats, gather to buy and sell on market day.*

gigantic steps, each many miles in depth, to the puña or high plateaux in the heart of the mountain system. These plateaux, the home of the llama, the huanaco and the vicuña, are cold and damp and treeless. They are separated from one another by a series of deep valleys, running roughly north and south. Very high ranges of mountains, clad in perpetual snow, overlook them, and give rise to torrents which find their way into the swift rivers carving still deeper the sub-tropical valleys far below.

During the early part of this journey the mules, unaccustomed to their burdens, frequently showed their resentment by bucking their loads off into some convenient quagmire. The members of our party, more accustomed to

driving motor cars than mules, and being unwilling to use the usual accelerator in the form of a spur with spikes nearly three inches in length, at first found difficulty in steering a true course. In a few days, however, we were riding on the brink of precipices with apparent, if not real, impunity, and the mules soon learnt their job.

Anyone who is familiar with Latin American countries, where conflicting reports, inaccurate information, delays as uncertainties, are the inevitable lot of the traveller who leaves the beaten track, will recall the exasperating vagueness in regard to time and distance which can be so trying to the temper. There the "mañana" of Spain has many equivalents suitable for every occasion, and patience is the only antidote. In the most remote districts which we visited we had our full share of such devastatingly non-committal or misleading replies in answer to our questions. I recollect that, while riding towards a certain village which I could see ahead, I endeavoured to determine the local scale of distance, which conformed to no normal

standard. Whenever I met a muleteer on the way, I asked him how far it was to the village, and I wrote the replies in my notebook. These replies included "una legua, dos leguas, media legua, una hora, cerca, cerquita, allá abajo, aquí no más." All were incorrect. In England the now obsolete league used to be generally accepted as a distance of three miles; in France it was 3.6 miles; in parts of South America it is theoretically the distance a man can travel in one hour on a good horse over a mountain trail. This definition is good enough if you can stick to it; but, unfortunately, the league expands and contracts in the manner of the Irish mile and in proportion to the apparent freshness or weariness of the enquirer. When the sub-divisions of the league,



such as "aquí no más," are found to carry you on for two hours or more, you are inevitably compelled to surrender to the bogey of inaccuracy, though you may hope for the day when the country will be more accurately mapped. Occasionally a definite reply is given, such as an unequivocal "no hay," when something you want simply does not exist. But occasionally also an inaccurate answer is given deliberately, for the sake of politeness. I am told that in the Far East a man will sometimes say "Yes" rather than "No" if he thinks that the affirmative will be more pleasing. "Yes, we have no bananas" is considered more polite than "No, we have no bananas."

Our first objective in the heart of the Andes was the little town of Cabana beyond the continental divide, which was crossed, at 16,100 feet, six days after leaving Nazca. Our camps on the cold puña were in striking contrast to our bivouacs in the hot desert, and the effects of exertion at 16,000 feet were noticeable.

We stayed at Cabana for four days, making our home in a windowless mud hovel facing the central square of the village. By this time, beards had grown to dignified proportions, and the inhabitants of Cabana, whose picturesque little world had never before been invaded by such preoccupied scientists as we were, thoroughly enjoyed the entertainment which we provided. My attempts to paint pictures of their delightful metropolis at once summoned a small crowd. The sight of Miss McKinnon Wood, wearing riding breeches and busily breaking stones with a hammer, provoked mirth: while Professor Gregory, whose apparatus for boiling the thermometer evoked memories of some child playing with a toy steam-engine, was always attended by



*While there are whole streets in Cuzco enclosed by the marvelous walls of the Incas, there are many picturesque corners of more modern construction; but heavy rain is liable to wash the mud buildings into ruin.*

a curious audience who arrived at 6 a.m. and did not leave until dusk.

At Cabana we had considerable difficulty in making a fresh contract with the muleteers to continue the journey to Cuzco. Our departure was delayed at the last moment when the mother of our youngest and locally-recruited muleteer dashed onto the scene and hauled her son away from what she assumed was certain death. Eventually another youth, brave enough to face the eighteen days' journey through the mountains to Cuzco, was induced to join us, and we wound our way down to the deep Sondondo valley.

The next section of the journey was a test of man and beast alike. Range after range of mountains had to be



*A mud hovel with a leaky roof gave us shelter one rainy night in Chilcayo. The next morning the mules were loaded in the Plaza before descending to the deep valley of the rushing Pampachiri.*

crossed. Camps and bivouacs were made, sometimes at 12,000 feet or higher on the cold puña, and sometimes amidst sub-tropical vegetation beside a mountain torrent. For hours on end the caravan would climb, over landslides and watercourses where a false step might mean death, to the summit of a lofty ridge, only to descend again, by a zig-zag trail, to the next valley floor thousands of feet below. Sometimes we moved, in alternating rain and sunshine, across the trackless puña, but even beyond Cuzco the seemingly endless succession of mountain ranges continued. Occasionally a mountain village or a small town — Huacaña, Querobamba, Chiara, Huancaray, Andahuaylas, Huancarama, Abancay, Limatambo — lay on the route, but most of those days, and nights, were spent in the majestic wilderness of the Peruvian Andes.

All along the route various observations were taken and geological specimens were collected and classified for future examination. The trail was not always easy, and many rivers had to be crossed by wading, on slippery

boulders, through the powerful current. The villages with their picturesque inhabitants in remote parts of the mountains, and ancient Cuzco itself, were in interesting contrast to the forsaken miles between. The incidents of the journey were probably like those of any similar journey, but the members of the expedition had at least one unusual experience.

Before reaching Querobamba the muleteers began recounting tales of bandits who, they said, made a habit of lying in wait for passing caravans such as ours in order to steal the mules during the night. As we progressed the head muleteer, who had a sinister reputation for banditry himself and therefore should have known what he was talking about, worked himself into such a state of anxiety that he begged me to sit up at night with my gun and to fire a shot into the darkness at intervals in order to scare away any bandits who might be lurking there. Sleepiness, and a fear of hitting our own mules, kept me in my tent, and no mules were stolen, although we several times mislaid a few of them for nearly a whole



*Cuzco, the ancient capital of the Incas, lies in a broad valley at 11,000 feet. The Plaza de Armas, guarded by several Churches in the Spanish style, is a large open square in the middle of the town.*

day when they wandered off for miles in search of water during the night.

We noticed that, while the rumours of bandits continued, the worst malefactors were always supposed to be just ahead of us. Finally we reached the neighbourhood of Andahuaylas, where even the muleteers thought we were comparatively immune from bandits. While we were preparing camp, the Sub-Prefect of Andahuaylas, accompanied by three armed individuals, suddenly appeared on horseback and asked for our credentials. Having satisfied him that we were a harmless expedition, I asked him why he was laughing so heartily. He handed me a telegram which he had received from Abancay, stating that a party of four suspicious looking individuals, carrying arms and boxes of ammunition and revolvers, had entered the district and should be arrested at once. We were supposed to be the "bandits," and our boxes of foodstuffs and geological specimens were the "boxes of ammunition and revolvers!" It subsequently transpired that the governor of one of the

remote villages through which we had passed had started the scare by sending a messenger sixty miles through the mountains to the nearest telegraph station, whence a stream of telegrams had issued over half Peru.

From Cuzco, with its splendid monuments surviving from the period of the Incas, all the collections and sketches, together with such equipment as was no longer needed, were sent back to the coast by rail. Beyond the old town the eastern foothills of the Andes gradually descend to the Amazon basin. We now made our way, after visiting the ruins of Machu Picchu, to the upper waters of the Urabamba river, hoping daily to receive news of the canoes for which we had tried to make arrangements in advance. Early in May we reached Rosalina, once a flourishing market place but now no more than a name indicating a remote spot in the jungle. No Indians and no canoes had arrived, and for twenty-four days we were obliged to live a jungle life while Mr. Tarnawiecki, accompanied by three local natives, fought his way through sixty miles of forest across the arc of the great bend



*The Vilcanota flows northwards to the Urubamba river through a deep gorge of awe-inspiring beauty. The ruins of Machu Picchu, constructed under the Incas, were discovered in the dense jungle overlooking this gorge.*

of the river north of Rosalina and collected the necessary canoes. By the time these solid mahogany dug-outs, each forty-two feet long, arrived with their Indian crews, we had had ample time to appreciate the beauty of the thousands of butterflies and the disadvantages of the millions of other insects which invaded our camp.

Owing to the loss of a box of supplies bought at Cuzco, our provisions began to run short. All sorts of expedients were resorted to in order to make "yucca" and unripe plantains a foot long more or less palatable. There were a few, but very few, inhabitants of this jungle area, and I made long tramps to their isolated huts to induce them to

sell me a scraggy chicken or a handful of rice.

Shortly before we left our primitive home—a decaying thatched roof supported by poles and enclosed only by the jungle—one of our distant neighbours met with a nasty accident. The current of the river is so swift that it is futile to fish with a line, and, when dynamite cartridges can be secured, these are used to stun the fish. Early one morning we heard a detonation, and soon afterwards a man came running to our camp. His friend, he said, had been fishing with dynamite and a cartridge had exploded in his hand, blowing most of it away. Hastily we went to tend the injured man, and I have rarely had a more unpleasant task than that of bandaging, as well as I could with our scanty medical supplies, the gory stump and the scarred face of the unfortunate man as he lay on the

floor of his hut. A messenger was sent for a doctor, but several days had to elapse before he could reach that distant spot.

On May 27th we began the journey down the river. About two hundred and fifty miles of rapids lay ahead of us before we could reach the open river, but, travelling forty or fifty miles a day, we made good progress. On this stretch of the river portages were fairly frequent, although it was not always possible to avoid the dangerous rapids. But the Indians were skilled in their work, and they earned their nights of rest on the sandbanks where tracks of jaguar and tapir told us that we were not alone.

On June 2nd we entered a narrow defile, where the water rushed white and menacing in dangerous rapids and whirlpools. This gorge, known as the "Pongo de Mainiqui" (Gateway of the Parrots), is about a mile and a half in length. It is the point where the river finally breaks through the foothills, and we halted there for three hours to collect fossils from the limestone walls. Meanwhile the Indians carried the baggage as far as they could over the rocks, and lowered the canoes with ropes through the boiling rapids. Both empty canoes were swamped in a few seconds, but, when they had been baled out, the baggage was replaced and we took our places in them. The walls of the gorge were too precipitous to allow further progress on foot.

The first canoe, carrying Mr. Tarnawiecki and six Indians, was swept downstream at incredible speed and finally beached, half full of water, a quarter of a mile away and out of sight. The second canoe, also manned by six Indians and carrying Professor Gregory, Miss McKinnon Wood and myself, swung into the rapids, but was caught by a whirlpool. Wave after wave broke over it, and it was completely submerged while we still sat in it. A moment later it capsized in midstream. One of the crew sank immediately, and Professor Gregory was carried away, only to disappear a few moments later. The rest of us managed to reach the shore where, isolated from one another by slippery limestone buttresses which defied every attempt to pass round them, we clung to the rocks and waited for our

companions in the other canoe to return for us. We could not see them, and it was impossible for us to climb the overhanging walls of the canyon which enclosed us. Mr. Tarnawiecki told us later that the first intimation he had of our accident was the sight of some of the baggage floating rapidly past him down the river. Emptying their canoe as quickly as possible, he and his crew pushed it back into the water and began the slow battle against the current. A quarter of an hour or more must have elapsed before they managed to manoeuvre past the lurking whirlpools to rescue us from our predicament.



*The expedition slept one night amidst the herculean walls of ruined Machu Picchu, far above the deep gorge of the Vilcanota. The huge stones, hewn with marvellous precision, are set up without mortar, yet it is often impossible to put the blade of a knife between them.*





*The jungle, encumbered by lianas, fallen trees, and a variety of large-leaved tropical plants, and beautified by many species of orchids, is a dank, sombre place which only monkeys and wild beasts can penetrate. Man, hacking his way through with the "machete," is an insignificant pygmy.*

A search for our missing companions was made until dusk, when we, wet and gloomy, bivouacked on a sandbank below the scene of the accident. At dawn, having discussed the best plan of action, I left with six Indians in one of the canoes in order to send the sad tidings to Europe from the nearest telegraph office at Masisea. Travelling from sunrise until sunset, with a crew who worked admirably under the tropical sun although we were short of food, it took me eleven days to reach Masisea. Clad only in a shirt and cotton trousers, for nearly all my kit had been lost in the river, I gazed only on the continuous walls of jungle, the sky above, or the ever-growing river. Mile after mile the canoe progressed, often over sleek, swift water, sometimes through foaming rapids, sometimes across lake-like expanses where the current seemed dormant. Occasionally an alligator or a "buféo" (river dolphin) offered a sporting target; a deer, a giant tapir and other animals appeared within range on the bank. We required meat, but my guns were at the bottom of the river, and I could not let the Indians delay in order to

hunt. Our only arms were their bows and arrows. One of the men, however, succeeded in shooting a water-hog which provided our first meal of meat for many days. It was the first occasion on which I have eaten meat killed with the weapon of primitive man.

While I hastened to Masisea, the other members of the expedition continued the search for the body of our missing leader. Three days later they found him, and they buried him at the end of his last great journey. Then they, too, proceeded to Masisea, whence they were able to return to Lima by air on the first stage of the journey back to England.

I, having been appointed to His Majesty's Legation at Bucharest, continued on my way by launch down the Urubamba and Ucayali rivers until I reached Iquitos. A few days later I was able to proceed in a Brazilian steamer to Mañaos, and thence on down the Amazon — a memorable journey of yet another thousand miles — in a vessel of the Booth Line which eventually carried me to Europe.



*The grim gorge known as the "Pongo de Mainiqui," full of very dangerous rapids and lurking whirlpools, was the scene of the accident. Water streaming from the limestone walls made the rocks perilously slippery, until they became too precipitous for further progress.*



*A jungle home, marvellously constructed out of reeds and palms, has an ample roof against the tropical rain. In front of this fine specimen Indians have been smearing raw rubber on a cloth stretched on a frame, in order to make a waterproof bag.*

## Editor's Note Book

### Dean Brock

Dr Reginald W. Brock, whose recent tragic death in an aeroplane accident in British Columbia, shocked not only all Canadians, but the scientific world, was a member of the Editorial Board of the *Journal*, and took the keenest interest in its progress as well as in the welfare of the Society. He had been elected, only a few months ago, President of the Royal Society of Canada, the highest honour to which a Canadian scholar could aspire. He had been for years one of the principal members of the faculty of the University of British Columbia; had previously filled the important office of Deputy Minister of Mines of Canada; and had won an international reputation as a geologist and an expert in mining. The Canadian Geographical Society has lost one of its most brilliant members, and Canada mourns one of her most distinguished sons.

### Our Contributors

Howard Angus Kennedy, whose memories of '85 appear in this number, was a war correspondent in the second Riel Rebellion. His recollections of the campaign in the North West are a definite contribution to a subject that has been clouded with a good deal of ill-informed and very imaginative speculation. Mr Kennedy is to-day the very active National Secretary of the Canadian Authors' Association, and has several books to his credit. Mr Coverley-Price, who describes and illustrates an important journey across Peru and the Andes to the upper waters of the Amazon, is to-day a member of the staff of the British High Commissioner in Ottawa. Mr Robinson, whose "Orchards of Nova Scotia" appeared in the *Journal* in July, 1934, returns to the same part of the Maritime province, with its historic and picturesque associations. Dr Harvey-Jellie, also well known to readers of the *Journal*, has

something worth while to say about a part of Southern Europe that may at any moment become front-page news. Mr Green's article on the Beaver is the result of close personal knowledge.

### Isaiah Bowman

Members of the Canadian Geographical Society will have learned with particular pleasure of the appointment of Dr Isaiah Bowman to the Presidency of Johns Hopkins University. For twenty years Dr Bowman was in a very real sense the Director of the American Geographical Society, and it was largely through his inspiration and hard work that it grew from small beginnings to the first rank. Dr Bowman came to the inaugural meeting of the Canadian Geographical Society in January, 1930, and has ever since taken a friendly interest in its activities. The *Journal* expresses without doubt the sentiments of all members of the Canadian Geographical Society in wishing Dr Bowman as many years of useful and constructive service with Johns Hopkins University as he had with the American Geographical Society.

### Learn to Swim Campaign

There were more deaths from drowning in Ontario during the short season of 1934 than there were from motor accidents during the entire year. Realizing this, the Canadian Amateur Swimming Association (Ontario) has undertaken a campaign to bring swimming instruction and resuscitation instruction to the people of Ontario.

August will be proclaimed a general "Learn to Swim — Learn Life Saving" month, and September will be a special similar month for children.

Local convenors and committees will be appointed in cities and towns and the Provincial Government and other organizations will cooperate in publicity and arranging free instruction.

## THE SMOKE OF THE BRITISH EMPIRE

Jack Hulbert is shown below, with Lilian Harvey in a scene from "Happy Ever After" in which they co-starred. You'll be seeing genial jack next in his new Gaumont-British comedy success "Alias Bulldog Drummond," in which Fay Wray, the lovely Canadian-born actress, is co-starred.

Jack Hulbert, besides being a singer, dancer and fun-maker extraordinary, is renowned for a sparkling and unique personality. Through his riotous antics and dancing eccentricities, his name at the head of the cast of a Gaumont-British picture is accepted as the promise of abundant merriment.

From his expression, the cigarette he is smoking in the picture below is undoubtedly a Gold Flake!—because in common with most other distinguished English stars, Mr. Hulbert prefers the superlative English quality of W. D. & H. O. Wills' Gold Flake Cigarettes. When he made a hurried trip to Toronto from New York a few months ago, Mr. Hulbert expressed great pleasure that in Canada he could get his favourite smoke — Gold Flake Cigarettes.

Copyright Photograph  
Courtesy Gaumont-  
British Corporation,  
London.



Pocket tin of fifty - 55 cents.

W. D. & H. O. WILLS'

# GOLD FLAKE

CORK TIP OR PLAIN

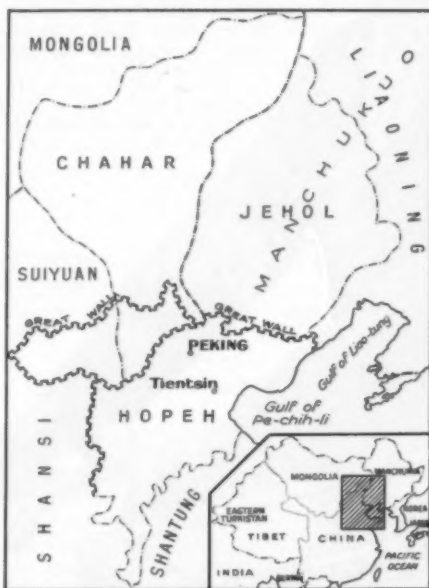
## CIGARETTES

*A shilling in London—a quarter here*

## Travel - Adventure - Recreation

### Hopei and Chahar

These two provinces of the uncertain region known as China have been much in the news lately, and as we are likely to hear more of them it may be worth while to fix their position in our minds. Taking the Great Wall of China as a boundary, it will be remembered that it runs from the sea inland north of the old capital Peking, and gradually swings

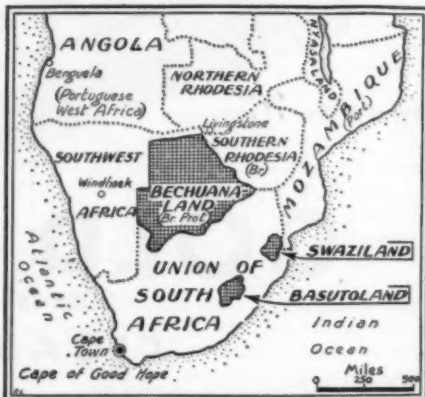


around toward the south, enclosing what is known as China Proper, the land of the Chinese as distinguished from the lands of the Manchus and Mongols who at various times conquered China and thereafter were more or less absorbed by the Chinese. The Province of Hopei lies south of the Great Wall, as Jehol, of which we heard a good deal a year or two ago, lies north of it, and Chahar, also outside the Wall, is roughly west of Jehol. The present understanding—or misunderstanding, as you like—between Japan and China has to do with the relations between Hopei and Chahar, on the one hand, and Manchuria or Manchoukuo, on the other.

It is perhaps not altogether out of the way to picture the Japanese influence as a wave that some years ago swept over Korea, then absorbed Manchuria, then Jehol, and is now penetrating Chahar and Hopei. The wave may be regarded as economic, or political, or both, as you choose.

### Consolidating South Africa

By an agreement entered into between the Union of South Africa and the Imperial Government the Protectorates of Bechuanaland, Basutoland and Swaziland are to be transferred to the Union. When the Dominion was created in 1909 these very large districts, with a total area of 292,000 square miles—larger than Alberta and the Maritime Provinces combined—were not included, largely because the natives much preferred the rule of Imperial officers, whose policy was to make no unnecessary change in existing systems of tribal government, to that of the Boer majority in South Africa, which the natives profoundly distrusted. What has been agreed to is not an immediate transfer of the Protectorates, but the gradual harmonizing of interests and bringing about the closer trade and other relations, with ultimate absorption of the Protectorates into the Union when this can be done without injustice to either whites or natives.



Map by Courtesy of the Christian Science Monitor.



## THE CANADIAN GEOGRAPHICAL EDUCATIONAL DIRECTORY

A Department for the announcements of Universities, Colleges and the better Private Schools of Canada, provided for the convenience of parents seeking the best educational advantages for their boys and girls.

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For Calendar apply to Bursar.



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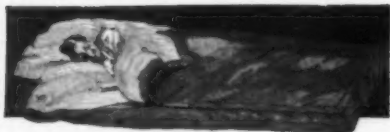
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CANADIAN  
GEOGRAPHICAL  
JOURNAL

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MONTREAL

With the addition of the Protectorates, the Union of South Africa will have an area—irrespective of the mandated territory of Southwest Africa, formerly a German colony—of 765,000 square miles. Assuming that Southwest Africa is not returned to Germany, it will be seen by the map that the Union of South Africa will occupy the entire southern part of the continent, up to the Portuguese colonies of Angola on the west coast and Mozambique on the east coast, an area of well over 1,000,000 square miles. Some day probably the two Rhodesias will be taken into the Union, which will add 235,000 square miles, and will make the area somewhat more than the Canadian Provinces east of Saskatchewan.

## Franklin in Tasmania

One associates the name of Sir John Franklin so closely with the Arctic, and his tragic death in the Canadian Archipelago, that one is inclined to forget that he was for a time Governor of Tasmania, about as far removed as it could very well be, both geographically and in the character of the country, from the bleak and inhospitable region where he won imperishable fame. Franklin's service in Tasmania took place between his return from his second overland expedition in 1827 and his last voyage. He returned from Tasmania in 1845, and sailed the same year for the Arctic. Frederick Whymper, the famous mountain-climber and traveller, said of him: "The name of Sir John Franklin, whose sad destiny it was to perish at the moment of triumph, stands preeminent as one of the brightest ornaments in our long list of naval heroes. He brought to his aid the love of adventure, a perfect knowledge of seamanship, and a zeal for geographical discovery, combined with an integrity of purpose and a hardy intrepidity that, even in the service he so highly adorned, have never been surpassed." In the July number of *United Empire* will be found a short but interesting article on Franklin's association with Tasmania.

## Amongst the New Books

In the December, 1932, number of the *Journal* Mr Don Munday described his first attempt to climb Mount Waddington, about 200 miles north-west of Vancouver. Sir Norman Watson and Edward J. King tell very entertainingly the story of their expedition on skis across the Coast Range (*Round Mystery Mountain*. Longmans, Green & Co., Toronto, 1935, \$4.50), in the immediate neighbourhood of Waddington. The book is worth while as a record of travel in one of the least-known parts of British Columbia, and in the light it throws upon one of the most gigantic and magnificent of Canadian mountains. Some day the Coast Range will draw thousands that love the things they have to offer in such abundance. "No words of ours" say the authors "could ever do justice to the beauty of the country through which we passed, or could ever adequately describe the fascination of the Coast Range. So magnificent, so elusive, so closely guarded by its outposts of granite foot-hills and densely timbered valleys is Mount Waddington, the monarch of the Range, that it is little wonder it is known as *Mystery Mountain*."

\* \* \*

In these days of air travel and radio there are very few places on the earth that are really remote. When a couple of days or so will take an Englishman to India or a Canadian to South America, and, above all, when by turning a knob on the short wave set one is put into immediate communication with places half around the globe, a book of travel in Persia lacks the air of novelty that would have belonged to it not so many years ago. And yet it is well worth while to journey on ponies through the *Valley of the Assassins* with Miss Freya Stark (Toronto: Musson Book Company, 1934, \$4), pay a visit to the Throne of Solomon, and climb through the Defile of the Unbelievers, near the southern shore of the Caspian

Sea. As Miss Sackville West has justly said, "This enthralling record ought to take its place among the classics of travel. She has found out one of the most beautiful countries in the world and done it justice."

\* \* \*

In a more serious vein Dr Felix M. Keesing, who had already written an admirable book on the Maori of New Zealand, describes the government and changing life of Samoa (*Modern Samoa*. Thomas Nelson and Sons. 1934. \$4.75). He describes the islands and their people, the problem of native government, justice and public order, land ownership and custom, economic life, contract labour, health and medical work, religion and education, and the problem of mixed races. Altogether a sound and informative piece of work, one of the more tangible results of the research activities of the Institute of Pacific Relations.

\* \* \*

The Annual Report for 1934 of the Canadian Historical Association contains a number of papers coming more or less within the field of Geography, including four on Jacques Cartier and his voyages.

\* \* \*

There is no better way of seeing a countryside than on foot, and Charles Plumb's *Walking in the Grampians* (S. J. Reginald Saunders, Toronto, 1935, \$2.50) is an admirable guide to those who have the opportunity of enjoying in this way the charm of the Highlands of Scotland. Under Mr Plumb's enthusiastic guidance we are taken through the Grampians, and are introduced to or reminded of the manifold beauties of Glen Clova and Glen Isla, Loch an Eilein and Loch Avon, Glen Lochay and Glen Tilt, Rannoch and Shiehallion and Drumal-bain, and a score of other hills and valleys and exquisite lakes whose charm is none the less real because it is quite different from that of our own Rockies.

Richard Katz spent two years traveling about different parts of the world, starting from Berlin. He made his way to Egypt by way of the Bay of Biscay and the Mediterranean, then to the Soudan, over the Red Sea to Arabia, and on to Bombay. India held him for a time. He crossed over to Ceylon, and later visited Java, Sumatra, New Guinea and Australia. From the island continent he naturally jumped to New Zealand, and sailed through Polynesia and the Sandwich Islands, and back to Japan and China. Turning east again across the Pacific, he saw something of our neighbouring republic, glanced at Cuba, and so home to Germany. What he came across in this long, zigzag journey he has put into a book (*Loafing Round the Globe*. London. Hutchinson & Company. 1935). It is not profound, but on the other hand it is decidedly entertaining.

\* \* \*

Books about travel and exploration in the polar regions have an appeal of their own, and that appeal was never more evident than in the account of the expedition to Greenland led by Gino Watkins (*Watkins' Last Expedition*. By F. Spencer Chapman. London: Chatto & Windus. 1934. \$4.50). Written in simple, unpretentious language, it describes the work of the expedition, which consisted mainly of gathering information that would be useful in connection with the proposed Northern Air Route. What the average reader will find most interesting, however, is the human side of the story; the life of four young Englishmen on this vast, bleak, inhospitable island; their relations with the Eskimo; sledge and kayak journeys; the melodramatic disaster to the so-called Flying Family; and the tragic end of Watkins.

\* \* \*

No more comprehensive account of climbing and roving in the Julian Alps has been published in recent years than that of the veteran German mountain-climber Julius Kugy (*Alpine Pilgrimage*. Toronto: Musson Book Company. 1934. \$4), for which English readers are indebted to H. E. G. Tyndale's excellent translation. To Dr Kugy the Alps have been very much more than a

region of high peaks, put there that men might climb to the top of them. "One should not" he says "seek for a mere scrambling-ground among the mountains, but rather for their spirit"; and he adds that his book is "an endeavour to describe those benefits which the mountains have poured into my life; a thankoffering, or even, it might be said, a Canticle sung to the glory and praise of the hills."

\* \* \*

In all the history of exploration and conquest there are no more romantic episodes than those that have to do with the enterprises of Spanish adventurers in America. Since the days of Prescott many books have been written on this enticing theme, but it has remained for F. A. Kirkpatrick (*The Spanish Conquistadores*. Toronto: The Macmillan Company. 1934. \$4.50) to bring the whole great movement within the compass of a single volume. Columbus, Cortes, Pizarro, Balboa, Magellan, Quesada, Mendoza, Valdivia, these are but a few of the picturesque company of discoverers and captains, sometimes high-principled, oftener cruel and rapacious, who move gallantly through these pages. Altogether this is one of the most admirable of that ambitious historical series "The Pioneer Histories," edited by Dr V. T. Harlow of Oxford and Dr J. A. Williamson.

\* \* \*

In two earlier volumes the History of the Canadian Bank of Commerce was brought down to the period of the Great War. A third volume has now been published, dealing with its activities since 1918, and also of those banks which now form a part of its organization. The work is admirably done by A. St L. Trigge, and forms a valuable record of an important institution.

\* \* \*

A useful book of reference to many people is *Canadian Ports and Shipping Directory* compiled by Frederick William Wallace (National Business Publications, Gardenvale, P.Q., 1935). The book is packed with information, is in fact a compact encyclopaedia of its particular subject, and the editor's name is a guarantee of reliability. As it includes lake and river as well as ocean ports, it will be of service to a wide circle.

